The Boston Medical and Surgical Journal

Table of Contents

February 4, 1915

ORIGINAL ARTICLES.

A Study of Children with Positive Skin Tuberculin Reactions. *By Orville F. Rogers, Jr., M.D.*, Boston..... 161
Two Cases of Rupture of Intestine. *By Lincoln Davis, M.D.*, Boston..... 163
Urinary Acidity and Beta-Oxybutyric Acid Determinations in Recurrent Vomiting. *By Willard S. Parker, M.D.*, Boston 164
The Significance of X-Ray Examination Following Operation for Congenital Pyloric Tumor. *By Charles L. Scudder, M.D.*, Boston..... 166
Some Studies in Fat Indigestion. *By Charles Hunter Dunn, M.D.*, Boston..... 167
Acute and Chronic Empyema. *By Wyman Whittemore, M.D.*, Boston..... 168

CLINICAL DEPARTMENT.

Report of a Case of Congenital Multiple Cystic Disease of the Kidneys in Which One Kidney was Removed. *By Francis S. Watson, M.D.*, Boston..... 169

NEW INSTRUMENT.

A Cheap Electric Heater.. *By Edward von Adelung, M.D.*, Oakland, Cal..... 171

MEDICAL PROGRESS.

The Bacteriology of the Gastro-Intestinal Canal in Infancy. A Summary. *By John Lovett Morse, M.D.*, and *Fritz B. Talbot, M.D.*, Boston..... 171

SOCIETY REPORTS.

Clinical Conference, Neurological Institute, First Division, New York. Meeting of Nov. 12, 1914..... 175
The College of Physicians of Philadelphia. Meeting of Nov. 4, 1914..... 178
New England Pediatric Society. Meeting of Dec. 4, 1914.. 180

BOOK REVIEWS.

Therapeutics of Dry Hot Air. By Clarence E. Skinner, M.D... 182
Modern Medicine. Its Theory and Practice. By Sir Wm. Osler, M.D., and Thomas McCrae, M.D..... 182
Diseases of the Rectum and Anus. By P. Lockhart-Mummery.. 183
The Backward Baby. By Herman B. Sheffield, M.D..... 183
A Mind Remedy. By John G. Ryerson, M.D..... 183
A Treatise on Diseases of the Rectum and Anus. By A. B. Cooke, M.D..... 184
The Tonsils—Faucial, Lingual and Pharyngeal. By Harry A. Barnes, M.D..... 184

EDITORIALS.

Federal or Local Administration of Maritime Quarantine.. 185
A Career of Professional and Public Service..... 187
A Hospital Ship for Deep Sea Fisheries..... 188
The Nursing Question..... 189
Congenital Pyloric Tumor..... 190
Medical Notes..... 191
Current Literature..... 193

MISCELLANY.

Regulations of State Department of Health..... 197
The Ambulance Construction Commission..... 198
Insanity in Massachusetts..... 198
Examination of Candidates for Assistant Surgeon..... 199
Belgian Physicians' Relief Fund..... 199
Notices, Appointments, Resignations, Recent Deaths..... 200

Original Articles.

A STUDY OF CHILDREN WITH POSITIVE SKIN TUBERCULIN REACTIONS.*

By Orville F. Rogers, Jr., M.D., Boston.

[From the Children's Medical Department, Massachusetts General Hospital.]

This study was made at the suggestion of Dr. Fritz B. Talbot, from the records of the Children's ward of the Massachusetts General Hospital, starting with the establishment of that ward on July 1, 1910, and running up to July 1, 1913. Therefore the results here reported deal with children who have been out of the hospital at least one year and not over four years. The average of those heard from was two years, four months.

Those children are included on whom a Von Pirquet (skin tuberculin) reaction was done in the usual manner, with positive results. There were 69 of these in the three years. A number of positive cases were discovered in doing routine skin tuberculin tests, where there was no reason to suspect tuberculosis. These are included in this report, while obvious tuberculosis, in which the skin test was negative, is excluded.

The knowledge of the present condition of these children was gathered from various sources in August, 1914. Some came into the hospital in response to letters, others wrote, and the outpatient records were also used. In all we gained sufficient evidence about 42 children to warrant including them in the report. In addition to this we have eight who died in the hospital—a total of 50 out of 69 whose fate is known with more or less certainty.

The table arranged according to age shows that on the whole the younger the patient, the graver the prognostic import of the positive skin reaction. In the first two years of life 11 out of the 17 of whom we know anything, or 65%, are dead. These figures could easily be made to read 11 out of 15, as the two children under one year recorded as alive, might have been left out on the grounds of too fragmentary a knowledge of their after-careers. Neither of these patients apparently had tuberculosis during his hospital stay, but one of them showed signs in his lungs a few months afterwards—since when he has been heard from only indirectly, but is probably alive.

Of that same group of 17, only four—or 23%—have no evidence of active tuberculosis, and only three are really well—a per cent. of 18.

The corresponding figures for children over two years are: known about, 33; dead, 7—21%; alive with no signs of active tuberculosis—21, or 64%; and alive with no illness whatsoever 10, or 30%—almost three times as favorable an outlook.

The second table shows the 69 cases arranged according to diagnosis. In the lowest row of this table are collected the statistics of 24 of the patients—their diseases being non-tubercular, with two exceptions, and none of them having tuberculosis at present as far as known. The two tubercular patients had solitary tubercle(?) and tuberculosis of the right elbow respectively, but nothing has been heard from either of them since discharge.

The most frequent of the tubercular diseases were tubercular peritonitis and pleurisy. Of the five peritonitis cases heard from three had died, while two others are perfectly well. It is interesting to note that these patients either died

* Read at a meeting of the New England Pediatric Society held December 4, 1914.

TABLE I.—AGE DISTRIBUTION OF POSITIVE CASES.

Age.	Total Positive Reactions.	Total Known About.	Total Alive.	% Alive.	Alive and Free from Tuberculosis.	% Free from Tuberculosis.	Alive with Active Tuberculosis.	Total Dead.	% Dead.	Died of Non-Tubercular Illness.	Died of Tuberculosis.	Died of Unknown Cause.
Under 1 year	8	7	2	29	1	14	1	5	71	1	4	0
1 to 2 years	10	10	4	40	3	30	1	6	60	1	4	1
2 to 3 "	9	5	4	80	3	60	1	1	20	0	1	0
3 to 4 "	9	4	3	75	1	25	2	1	25	0	1	0
4 to 5 "	7	5	3	60	3	60	0	2	40	1	1	0
5 to 6 "	9	8	6	75	6	75	0	2	25	0	2	0
6 to 7 "	4	3	3	100	3	100	0	0	0	0	0	0
7 to 8 "	2	0	—	—	—	—	—	—	—	—	—	—
8 to 9 "	5	4	4	100	2	50	2	0	0	0	0	0
9 to 10 "	3	1	1	100	1	100	0	0	0	0	0	0
Over 10 "	3	3	2	67	1	33	1	1	33	1	0	0
Totals	69	50	32	64%	24	48%	8	18	36%	4	13	1

of tuberculosis quite promptly or else recovered entirely so far as we know at present. Age apparently did not dictate the outcome, for the two types averaged about the same.

The children who had pleurisy are all in good health if the five who reported are any criterion. The average age of these children is four years.

The cases of miliary tuberculosis and tubercular meningitis perhaps should be classed together but the meningitis cases have been kept separate, as miliary tuberculosis did not appear in the discharge diagnosis. The course of these cases was naturally very unfavorable with the exception of one child who will be alluded to later. The average age of these patients was younger than any other group—two years, two months. It is of interest that two other cases of tubercular meningitis, proven by postmortem, gave negative skin reactions.

The cases of bone tuberculosis of which we have word are not doing well. Both the children with Pott's disease are reported as doing very poorly, and the little girl with periostitis still has new sinuses forming at intervals.

We have heard from only two of the three patients who had pulmonary tuberculosis, and of these one died of infantile paralysis, and the other still has tuberculosis of the cervical glands —though the lungs appear quiescent.

Glandular tuberculosis was very common, but as it was almost always associated with a more serious disease, which masked it, we can get no clear picture of its effects. One of these patients has since developed pulmonary tuberculosis, and is now in a sanatorium.

The diagnosis of "tuberculosis with otitis media" was made on a little girl of seven months, who gave a strongly positive skin reaction, but in whom the most careful examination failed to locate any focus. She died at Tewksbury one month after discharge from the Massachusetts General Hospital, and the diagnosis sent us from there was marasmus. Therefore she has been

TABLE II.—DISTRIBUTION ACCORDING TO DIAGNOSIS.

Diseases.	Total Positive Reactions.	Total Known About.	Total Number Alive.	% Alive.	Number Free from Tuberculosis.	Number with Active Tuberculosis.	Total Number Dead.	% Dead.	Died of Tuberculosis.	Died of Non-Tubercular Illness.	Died of Unknown Cause.
Miliary tuberculosis	6	6	1	17	1	0	5	83	5	0	0
Tubercular meningitis	3	3	0	0	0	0	3	100	3	0	0
Phthisis	3	2	1	50	0	1	1	50	0	1	0
Tubercular broncho-pneumonia	1	1	0	0	0	0	1	100	1	0	0
Pleurisy	8	5	5	100	5	0	0	0	0	0	0
Tubercular peritonitis	8	5	2	40	2	0	3	60	3	0	0
Cervical adenitis	2	1	1	100	0	1	0	0	0	0	0
Bronchial adenitis	1	1	1	100	0	1	0	0	0	0	0
Pott's disease	2	2	2	100	0	2	0	0	0	0	0
Tubercular periostitis	1	1	1	100	0	1	0	0	0	0	0
Tuberculosis and otitis media.	1	1	0	0	0	0	1	100	0	1	0
Lobar pneumonia	8	7	6	86	5	1	1	14	1	0	0
Chronic diarrhea	1	1	1	100	0	1	0	0	0	0	0
24 patients with various diseases, no one of whom now has tuberculosis so far as known	24	14	11	79	11	0	3	21	0	2	1
Totals	69	50	32	64	24	8	18	36	13	4	1

included in the non-tubercular group, thought it is hard to rule out a generalized tuberculosis.

In relation to the question whether children with positive skin tuberculins are predisposed to non-tubercular diseases, it was interesting to find that not one of the 38 patients who had signs of active tuberculosis in the hospital is at present suffering from any non-tubercular affection.

Of the 31 patients who in the hospital showed no signs of tuberculosis save for the positive skin reaction, one has since died of tubercular peritonitis and two more now have signs of activity in the lungs—10%. Many of these have chronic non-tubercular diseases, such as endocarditis, pyelitis, bronchiectasis.

In the group that we know something about there were several interesting cases, about one of which a few words may be said.

He was a boy of four on whom a diagnosis of miliary tuberculosis was made. The history was of anorexia, apathy, and continued fever "for some time." He had enlarged cervical glands, signs of consolidation at both apices, with râles, fluid wave in abdomen, an enlarged liver, palpable spleen, and active reflexes, with a Babinski. In 12,000 white cells he had 54% lymphocytes. No tubercle bacilli in his sputum.

In the course of three weeks the fluid wave disappeared, the other signs remaining the same. He ran a continuous fever, pulse constantly tended upward, and lost weight.

After discharge, according to his mother's story, he remained the same for two to three months and was then sent back to the Cape Verde Islands, where his people came from. There he began at once to gain and now, after three and one-half years, the mother says that he is very well and strong.

While this is only a single case it points to the climatic conditions as being an important factor in this boy's recovery.

In drawing conclusions as to the chances of life for a child who reacts to the Von Pirquet test, we must consider what the mortality is in the average child.

The average age of these children, as it was calculated by adding their ages together and dividing by the number of children, is four years, four months. The average length of time since leaving the hospital was two years, four months. Insurance tables show that of 10,000 children aged four years, four months, 430 would be dead at the end of two and one-third years, a percentage of 4.3.

While the numbers involved in this tabulation are very small the difference between 36% and 4% could hardly be pure chance.

It may be argued that those patients who had an acute form of tuberculosis and died in the Massachusetts General, or were taken home a few days before death, should not be counted in making up our minds as to the probable prognosis of a positive reaction in those who survive. Therefore, eliminating the eight cases which were fatal in the hospital, and one of miliary tuberculosis which died two or three days after discharge, the figures show that nine out of 41 died, a mortality of 22% instead of 36%, but this is again much higher than the ordinary mortality.

If we still further omit from this number, nine, the four who died of non-tubercular illnesses, and the one of unknown cause, we find that we have four out of 36 who died of tuberculosis at least several months after leaving the hospital—11%—almost three times the mortality of the normal.

SUMMARY.

Before the age of two a positive skin reaction seems to be an indication that the child's life is likely to be short.

The mortality among all children, up to the age of 10, who react to the Von Pirquet test is much higher than that of normal children.

The series is too small, and the time since the tests were made, too short, to permit us to draw any but the most general conclusions.

TWO CASES OF RUPTURE OF INTESTINE.*

BY LINCOLN DAVIS, M.D., BOSTON.

CASE 1. C. C. No. 196642, East Surgical. Seven years old. Schoolboy. Sent to the Accident Room of the Massachusetts General Hospital on July 19, 1914, at 11.05 A. M., by Dr. Alfred Davidson of Chelsea, with diagnosis of "Ruptured Viscus."

The following history was obtained: Previous health always good. Yesterday afternoon at five o'clock patient was running across a field and fell down, striking on a rock. His parents state that they think he fell about six feet. Immediately complained of pain in his stomach and has vomited many times since. Has passed apparently normal looking urine. Patient now has severe abdominal pain.

P. E. Well developed and nourished child, looks very sick. Lungs negative except for dullness at right base. Examined by Dr. W. H. Smith, who says lungs are not responsible for symptoms. Abdomen slightly distended, with marked spasm and tenderness everywhere. Percussion note tympanitic, with obliteration of liver dullness. No shifting dullness made out. On abdominal wall, over left upper rectus, is a contusion and abrasion, 1 inch in diameter. Temperature 100.2 by rectum. Pulse 148. Respiration 36.

Prepared for immediate operation.

Ether anesthesia. Iodine preparation. Five inch muscle-splitting incision carried down to peritoneum. Peritoneum opened with escape of much fluid and fecal material. Fluid baled out with gauze strips and gut explored. A perforation of the small intestine, reaching across the gut nearly to

* Read at a meeting of the New England Pediatric Society held December 4, 1914.

the mesentery was found. This was closed with No. 1 chromic catgut stitches and reinforced with a second layer of the same. The abdominal cavity was then thoroughly washed out with Tait tube and about 25 liters of salt solution. A cigarette wick was placed to the left flank and another to the pelvis. Abdominal wall was closed in layers with chromic catgut, reinforced by through-and-through sutures of silkwormgut. Patient sent to Ward H in poor condition. Stomach washed before patient was out of ether; considerable greenish fluid removed.

July 20th. Patient vomited during night once. Pulse has started to drop, but temperature is up. Patient looks very sick. Getting tap water by rectum and stimulation in form of caffein and camphor. Vomited once today.

July 22d. Pulse has steadily come down. Patient looks brighter this morning. Getting milk and lime water. Has not vomited since last note.

July 25th. Patient much brighter. Taking fluids in good amounts. Rectal tap water omitted. Wound septic about all stitches. A corset of adhesive plaster with hooks made and applied to keep wound together in case stitches slough out. Considerable foul discharge.

From this time on the patient made an uninterrupted recovery. There was considerable sloughing of the wound which closed by granulation. On September 2d he was discharged in excellent condition, with the wound healed, wearing an abdominal belt. Bowels acting normally.

CASE 2. C. E. A. No 177456. Age eight. Recommended by Dr. J. E. Connelly, of Brookline.

Entered hospital July 27, 1911.

Brought to Accident Room in Brookline Police Ambulance at 12.55 P. M. About one-half hour before entrance was struck by an automobile in front of his home in Brookline.

Examination: Well developed and nourished, little boy, pale, frightened, restless and crying with pain. No evidence of injury to head, chest or upper extremities. There are several slight abrasions on skin of abdomen on left side. Abdomen is held with board-like rigidity, and pressure on it anywhere causes patient to cry out in pain. Tympanitic except in left flank, where there is dullness which does not shift. Liver dullness not obliterated. Over outer side of left thigh is a small lacerated wound.

Patient remained in bed in Accident Room for about one and one-half hours awaiting consent of parents to operation. Was catheterized and small amount of pale urine obtained. Patient seemed to grow steadily paler. He lay quietly in bed and wanted to be left alone. Pulse 140, fair quality. Temperature 98, white cells 39,000. The board-like rigidity of the abdomen, with the rising pulse, high white count and shock, together with the nature of the accident, indicated internal injury with hemorrhage, and immediate operation was advised.

Operation: Septic Room. Ether. Five-inch median suprapubic incision. On opening peritoneum there was a gush of fresh blood, whole cavity was filled with it. Partially swabbed out. Careful inspection of liver and spleen revealed no injury, or source of bleeding. A presenting loop of small intestine was found completely severed, and the mesentery torn. Clamps placed on either side of torn intestine, edges trimmed and brought together in an end-to-end anatosmosis with Connell stitch of Pagenstecker, peritoneal coat united with continuous Lembert stitch. Another loop found where the peritoneum was lacerated completely around the gut, the muscular layer being uninjured. Torn peritoneal edges approximated with continuous Pagenstecker. Inspection of the rest of the intestines, which was very hurried on account of the patient's poor condition, revealed no further injury. Abdominal cavity washed out with hot salt solution. One cigarette wick to pelvis. Wound closed to wick in routine manner in layers. Sent to Ward F in poor condition. Stimulated, shock enema, put in Fowler's position. Given rectal seepage and frequent doses of strychnia.

Patient rallied well. Profuse serous discharge from wick. Unable to retain anything in stomach but water for three days. Bowels moved satisfactorily with enemata. In removing the wick on August 6th under gas a portion of omentum and two coils of intestine were pulled out. Replaced without any ill consequences.

Discharged August 20th in good condition. Wound a small granulating spot. Eating well. Bowels O. K. Walking about ward.

These two cases illustrate the well-known fact that operations for ruptured viscera to be successful must be prompt. In the first case reported, the margin of time elapsed since the accident had very nearly reached the limit of possible successful issue for that particular case. To wait until the diagnosis is certain in these cases is to court disaster. In cases of ruptured intestine, with effusion of septic contents, I feel sure that profuse and thorough irrigation of the peritoneal cavity is a life-saving measure. There has been no time for walling off on the part of nature and hence there need be no fear of spreading the infection; it is an entirely different proposition from a peritonitis from an appendix, in which cases nature has practically always had some opportunity of localizing the process, and irrigation is to be condemned.

I have found that children and adults retain ordinary tap water by rectum as well, if not better, than normal salt solution. Why this should be so, I do not know.

URINARY ACIDITY AND BETA-OXYBUTYRIC ACID DETERMINATIONS IN RECURRENT VOMITING.*

BY WILLARD S. PARKER, M.D., BOSTON.

A. H. 7 years old, had a negative family history. She weighed 6 pounds at birth, was never breast fed but given condensed milk. She gained very slowly the first year. At 4½ months she had an attack of vomiting lasting 3 days. At one year a similar attack. Since then she has had 2 attacks each year until 1911 when she had 6 attacks, with an interval between of 6 to 8 weeks. She had already had several attacks in 1912 when seen in November of that year.

* Read at a meeting of the New England Pediatric Society held December 4, 1914.

She had always been very constipated and has had almost no natural movements since birth, receiving an enema or cathartic almost daily. The stools were always hard and at times contained much mucus. On one occasion she passed a string of mucus 1½ feet long. There has never been any diarrhea nor were the stools ever white or clay colored. The diet had been a very reasonable one, containing little milk or cream but at times considerable butter. The feeding of fat seemed to precipitate some of the attacks. The mother thought the child nervous; she was very active.

A typical attack was as follows:—The child first complained of her throat being sore, though no evidences of inflammation were ever discovered. At this time she was usually slightly yellow. After several hours the sore throat disappeared, vomiting came on and lasted from 3 to 6 days. She was nearly always very constipated just before an attack and the bowels were made to move with great difficulty. The physical examination was as follows:—Flesh firm, color good, weight 42 pounds, about 6 pounds below normal. There was no other abnormality except that the abdomen was slightly distended and the liver enlarged; the liver dullness extended to the upper border of the fifth rib, the edge was felt 5 cm. below the costal margin.

The urine was normal and had a specific gravity of 1010.

The stool showed a moderate excess of fat as soaps.

The Roentgen examination of stomach and intestines was as follows:

The first plate two hours after the bismuth meal showed a dilated stomach reaching to the top of the sacrum. The second plate 6¾ hours after the bismuth meal showed the bismuth in the ileum, jejunum, and cecum. Normally, all the bismuth should have reached the cecum by this time. The third plate, 30 hours after the meal showed, in spite of an enema having been given, a large mass of bismuth in the cecum, some in the transverse and descending colons and in the sigmoid. Normally, there should be no bismuth in the cecum at this time.

Bismuth Enema. The bismuth travelled to the junction of the ascending and transverse colon where it stopped short. At this point there was considerable dilatation, as there was also at the cecum which was distended with gas. Normally, the bismuth should fill the cecum.

The conclusion from these findings was that there was some degree of obstruction in the region of the cecum. That the attacks of vomiting depended wholly, or in part at least, on this condition seemed probable.

The child was put on a rational diet for observation. About one week later she had a severe attack lasting four days, during which she vomited from eight to fifteen times daily. The bowels were moved with difficulty. The abdomen showed for three days considerable masses of fecal material in the right lower quadrant. As soon as enemas and cathartics succeeded in evactuating these masses the vomiting almost immediately ceased. Sodium bicarbonate was given in doses of five grams in twenty-four hours.

Very little of the sodium bicarbonate given by mouth during the attack was retained so it was given by rectum, 2 drams in eight ounces of water three times in 24 hours. Only a part of this was retained and as the urine remained acid until near the end of the attack, it apparently was not rapidly absorbed. Water, orange juice and cracked ice were given by mouth. The vomiting ceased on the fifth day of the attack.

The following are the urinary findings:

Day of Attack.	24-hour Amount cc.	Spec. Gravity.	Reaction to Litmus.	H + 10-7.*	Titratable N/10 Acid	NH_3 Grams Nitrogen.	NH_3 N/10	Acid + Alk.	Alk. Given. Gms.	Aceton and Diacetic.	B-Oxybutyric Acid Per Cent.	B-Oxybutyric Acid Gms.
2	360	1021	Acid	5.7						+ +	1.5	5.4
3	530	1022	Acid	5.1	307.	.640	460	767	5.0	+ + +	1.7	9.0
4	620	1024	Acid	5.3	372.	.794	567	937	8.5	+ + +	1.7	10.5
5	480	1026	Acid	7.2	52.	.757	541	593	4.5	+ + +	1.4	6.7
6	820	1018	Acid	7.4	0.	1.14	814	914	1.5	+ +	0.9	7.2
7	510	1016	Acid	8.3		.263	188	188	0.0		1.0	5.0
					Alk.							
8	950	1014	Alk.	8.3	28.				0.0	0	0.0	0.0

Hydrogen-ion concentration by the Palmer-Henderson Method.
Ammonia by the Folin Method.
Beta-Oxybutyric acid by polariscope.

The presence of the acetone bodies in large amounts, the high acidity of the urine and increased ammonia excretion are all evidence of a true acidosis. The increased ammonia is the reaction usually observed in acidosis and represents the normal reaction of the body to carry off the acids by combination with alkali; the specific gravities in this case are not so high as those frequently observed in the severe cases. The B-oxybutyric acid output is somewhat greater than the amounts found by other observers but there are very few observations on record. Vergeley found 6.8 gms. and 8.5 gms. to the litre. This acid has been found by animal experimentation to be the most toxic of the acid

bodies and there is no doubt clinically that the severest cases are those in which are found the less oxidized bodies, that is, diacetic and B-oxybutyric acids.

A review of the recent literature shows the etiology of the so-called primary acidoses still undiscovered. It is of interest that Sedgewick has found the creatin and creatinin of the urine increased before and during the attacks and that Underhill and Steele found in one case a large amount of lactic acid. Mellamby found an increase in creatinin, and also produced acetonuria in a child subject to recurrent vomiting by sudden withdrawal of carbohydrate from the diet and caused its disappearance by feeding glucose.

Clinically Coomby has noted the frequent connection of recurrent vomiting and chronic appendicitis, while Kerley has called attention to the frequency with which adenoids are found in these cases and the relief often obtained from operation. He has also noted that recurrent bronchitis is a condition which often occurs in children subject to recurrent vomiting and that the attacks may be simultaneous.

In the case here reported laparotomy was done. No adhesions were found. There was a general visceroptosis, dilated stomach and cecum. The cecum was so dilated that it was thought best to infold it. The appendix was removed. The child had no more attacks for ten months. The attacks then recurred but not with their former frequency and severity and there have been in the last year only a few very mild attacks. The vomiting would seem then to have been due in large part to the intestinal condition, so we have in this case though a secondary acidosis, a very severe one, and the suggestion is that more of the cases of recurrent vomiting be subjected to roentgen examination of the gastro-intestinal tract.

REFERENCES.

Vergeley: Archiv. Clin. de Bordeau, 1897, Vol. vi, p. 347.
Sedgewick: Studies of Recurrent or Periodical Vomiting. Amer. Journal Dis. Children, 1912, Vol. iii, p. 209.
Langstein and Meyer: Die Acidose im Kindersalter. I. Mitteilung; Jahrb. f. Kinderheilk., 1905, Bd. 61, S. 454.
Mellamby: Eine kurze chemische Studie über einen Fall von cycl. Erbrechen mit einigen Bemerkungen über Kreatinurie und Acidose, Jahrb. f. Kinderheilk., 1912, Bd. 75, S. 252.
Camby: Vomissements Cycliques et Appendicite, Arch. de. Med. des Enfants, 1905, S. 741.

THE SIGNIFICANCE OF X-RAY EXAMINATION FOLLOWING OPERATION FOR CONGENITAL PYLORIC TUMOR.*

BY CHARLES L. SCUDDER, M.D., BOSTON.

Surgeon to the Massachusetts General Hospital; Associate in Surgery, Harvard Medical School, Boston.

CASES of congenital stenosis of the pylorus may be grouped into four classes:

The first class includes all those cases which died previous to the date of the recognition of the condition by medical men. All those cases were treated medically and were experimentally fed. They all died.

The second class includes those cases which have been unrecognized dating since the time this disease has been understood and carefully studied. All these cases have been medically treated and have died.

The third class includes those cases which are recognized by the attending physician as cases of congenital stenosis of the pylorus, are referred to the surgeon for treatment, are operated upon and die. These cases usually die of starvation because of delay in instituting adequate treatment.

The fourth class includes all those cases which are recognized by the physician, are referred to the surgeon for operation, are operated upon and recover.

The chief difficulty which physicians and surgeons have in dealing with these cases of congenital stenosis of the pylorus is in making a positive diagnosis. One thing which makes the diagnosis difficult is the assumption on the part of the physician that pyloric spasm plays any part in tumor stenosis. I believe that pyloric spasm has nothing whatever to do with the condition of congenital stenosis of the pylorus. All variations in the degree of stenosis and the behavior of cases subsequently proved to be tumor cases may be explained without the assumption of pyloric spasm.

In these cases of congenital pyloric stenosis obstruction at the outlet of the stomach is the important fact. That obstruction in general at the pylorus may be either mechanical or physiological is generally recognized. But so far as any individual baby is concerned having a pyloric tumor, the obstruction is due to the tumor itself encroaching upon the lumen of the pylorus, and is not dependent in any way upon a spasm of the pyloric muscle. Variations in the degree of stenosis may be explained purely upon mechanical grounds: namely, upon the swelling of the mucosa, upon the encroachment of the tumor upon the lumen of the canal, and of the reduplication of the longitudinal folds of mucous membrane normally within the canal, all of which conditions can be proved to be present, and none of which conditions has to be assumed.

Anatomical variations of this sort are competent to account for that which heretofore has been explained only upon the assumption that tumor obstruction is associated with a pyloric spasm. If we can eliminate the idea of pyloric spasm from this group of tumor cases we shall go a long way toward reaching a quick diagnosis with shorter periods of experimental feeding and consequently such tumor cases will receive proper surgical treatment at an earlier date and the lives of more babies be saved.

* Read at a meeting of the New England Pediatric Society, December 4, 1914.

Dr. H. M. Richter (personal communication) of Chicago has had 11 cases of congenital stenosis of the pylorus examined by means of the x-ray bismuth meal by Dr. Case of Battle Creek, Michigan. Ten of these 11 cases were tumor cases. In each case there was demonstrated a complete closure of the pylorus and in each case bismuth passed through the stoma and not through the pylorus. These x-ray examinations were made from 7 days to 3½ years following the operation of gastro-enterostomy.

In one case of Richter there was no tumor but a spasm of the pylorus. A posterior gastro-enterostomy was done and after three years had elapsed the x-ray examination showed the bismuth passing both ways, that is, through the pylorus and through the stoma. This is a very significant case compared with the true tumor cases.

Dr. W. A. Downs of New York has had examinations made by the x-ray bismuth meal of 6 cases of congenital stenosis of the pylorus subsequent to operation. Invariably in these 6 cases the bismuth passed through the stoma and none went through the pylorus. The period of time which had elapsed from the operation to the x-ray examination was from four months to two years in these six cases.

Dr. James L. Mitchell of Washington, D. C., reports one case in which a bismuth examination 2½ years after posterior gastro-enterostomy was done for a pyloric tumor. This report showed that no bismuth passed through the pylorus, but that all went through the stoma.

Four years ago in a paper published in *Surgery, Gynecology and Obstetrics** I recorded the interpretation of x-rays taken by Dr. Walter J. Dodd following a bismuth meal in nine of my own cases of congenital stenosis of the pylorus that had had the operation of posterior gastro-enterostomy. These were among the first x-rays to be taken of such cases. In every instance the bismuth meal was seen to pass through the stoma and nothing was seen to pass through the pylorus. These x-ray examinations were made from one to eight years following operation. I am now having a larger series x-rayed.

Here then are well-authenticated reports of an x-ray bismuth examination in 26 cases of proved congenital stenosis of the pylorus following posterior gastro-enterostomy. All of these cases were observed by skilled physicians, surgeons and roentgenologists. The returns from these 26 cases are uniform. In each case the pylorus was obstructed, in each case the stoma was patent and was the only exit for the bismuth meal from the stomach. From this evidence it is fair to conclude that the tumor seen at operation continues to obstruct the pylorus.

In this connection it is important to recall the classical case of Morse-F. T. Murphy-Wolbach, of a child who had a congenital pyloric tumor obstructing the pylorus, in which a posterior gastro-enterostomy was done. The child died seven months subsequently from a cause unconnected with the stomach. At the autopsy the tumor seen at operation was found unchanged.

To this original observation may be added the case of Grulee and Lewis of Chicago. (Personal communication. To be reported by Dr. Lewis in detail in the *Jour. of the A. M. A.*) The child was operated upon shortly after birth because of a pyloric tumor. Nine months later the baby died of pneumonia. At the autopsy the tumor was found to be present blocking the lumen of the pylorus. To this report may also be added the record of Case 14 in Dr. Downs series. This child, Case 14, died of diphtheria three and one-half months after posterior gastro-enterostomy for a tumor of the pylorus. The tumor in this case was of the same size as at operation and was still obstructing the pylorus.

There are, therefore, three authentic cases in which the pylorus tumor discovered at operation has been seen from three to nine months following a plastic operation. These facts taken with the postoperative x-ray findings in the 26 cases recorded above afford a reasonable basis for the conclusion that the pyloric tumor persists and does not tend to disappear. The recognition of the persistence of the tumor in congenital pyloric stenosis is important.

a. The tumor alone with the mucous membrane changes is an adequate cause of the obstruction in all its phases, and it is unnecessary to imagine a pyloric spasm associated with the obstructing tumor.

b. The surgical treatment of these cases is without any question the only permanently effective treatment.

c. The postponement of the operation with the idea, now so prevalent, that the hypothetical spasm will let up and the tumor disappear and the child recover is unjustifiable.

d. A baby having tumor obstruction will always have tumor obstruction.

e. The omission of the hypothetical pyloric spasm from any consideration in these cases will result in earlier adequate surgical relief.

* September, 1910.

SOME STUDIES IN FAT INDIGESTION.*

BY CHARLES HUNTER DUNN, M.D., BOSTON.

Abstract: The cases studied at the Infants' Hospital were those which showed a marked intolerance of cows' milk fat, manifesting itself by showing signs either of failure of fat absorption, or of failure of digestion, or of both. These cases showed a variety of clinical features, the chief sign of intolerance being the appearance of excessive fat in the stools. The typical feature of fat indigestion is summarized in these words: Inability to gain weight without fat, and inability to gain with it.

* Read at a meeting of the New England Pediatric Society held December 4, 1914.

The points studied, and the conclusions reached, were the following:—

1. Are there any striking predisposing causes for fat indigestion? Chronic disease, particularly tuberculosis, was found associated with these cases with marked frequency. In the study of previous feeding, overfeeding with carbohydrate was found to be the history, rather than overfeeding with fat. The effect of long continued overfeeding and its consequent fermentation may be the primary injury, causing a failure in the power of digesting fat, which later comes to dominate the picture.

2. Can we successfully compensate for deficient power to digest and absorb fat, by increasing carbohydrate or protein, and if so, to what extent? The answer to this question is, to a very slight extent. The three elements, fat, sugar, and protein, must bear a fairly constant proportion one to another.

3. Is the micro-chemical examination of the stools for fat a reliable guide to the feeding of these cases, and if so, to what extent? The conclusion was that it is indispensable for the proper management of these cases. Nevertheless, the continued presence of excessive fat or soap in the stools is not incompatible with prolonged gain in the weight and freedom from clinical symptoms of indigestion. There is always some danger, where excessive fat is present, of a sudden "blow up," with clinical symptoms and rapid loss of weight. Free fat is always a danger sign.

4. What are the relative values of maltose and lactose as the carbohydrate element in these cases? In general, babies who cannot gain weight on a certain percentage of fat with lactose, can gain better on the same percentage of fat when maltose is substituted. As to whether the use of maltose actually increases the power of digesting and absorbing fat, the evidence is contradictory, and not conclusive.

5. What are the relative values of precipitated casein, and unmodified protein in these cases? This point is interesting in connection with the theories of the possible rôle of the cow's salts in fat indigestion. The evidence was contradictory and not conclusive. Fat "blow ups" occurred with the same quantity of fat, in cases where both forms of protein were successively used. Some cases did better with precipitated casein, but in no case did its use show clear evidence of increasing the power of digesting and absorbing fat. The gain appeared to come from the fact that in some cases precipitated casein is better digested than unmodified protein.

6. What is the value of lactic acid milk in these cases? The evidence on this point was not sufficient to permit the drawing of any conclusions.

The following is a summary of the ideas now held at the Infants' Hospital as to the treatment of these severe cases of fat indigestion.

The milk modifications used must be low in fat, average in carbohydrate, comparatively high in protein. The extra sugar should be maltose. A certain number of the milder cases will do well on this treatment. Severe resistant cases are those which cannot gain on a low quantity of fat, and cannot tolerate an increase. A large number of cases are so severe and resistant that they can only be saved by human milk. Breast milk will save most of these cases, even the severe ones, if used in time. It should always be used in resistant cases, whenever it can be obtained. Even a little breast milk is of value and may save a case which would otherwise be fatal. After a period of breast milk feeding, many cases are found no longer severe and resistant to artificial feeding. If breast milk cannot be obtained, the feeding is very difficult and the outcome uncertain. Excessive increase of carbohydrate or protein will not help these severe cases, and may do harm; I do not believe more than 7% carbohydrate, or 3% protein, should be given. Whey mixtures are of no help, except sometimes in very young babies, who vomit curds; they may do harm. Giving the protein in the form of precipitated casein may be tried, and may help in some cases. There is not sufficient evidence of its value to indicate its use as a routine.

The only way we have of managing these resistant cases without breast milk, is to keep the fat low, and we must be prepared for a period of loss of body weight, which may be prolonged. If they begin to gain when the fat is increased, it is no sign of permanent improvement; they may go to pieces at any time. Frequent examination of the stools for free fat and excessive soap must be made. In the presence of free fat, or in the continuous or increasing presence of excessive soap, the fat should be reduced, even if the baby is gaining. If a "blow up" occurs when the fat is increased, the fat in the food should be reduced to zero, and then worked up again, slowly. Frequent "blow ups" diminish the tolerance of fat. The best hope of eventually obtaining an increase in tolerance of fat sufficient to permit a gain in weight, is to avoid overfeeding with fat for a long time, even if much weight is lost.

ACUTE AND CHRONIC EMPYEMA.

AT THE MASSACHUSETTS GENERAL HOSPITAL DURING A PERIOD OF TEN YEARS FROM JANUARY 1, 1901, to JANUARY 1, 1911.

BY WYMAN WHITTEMORE, M.D., F.A.C.S., BOSTON,

Surgeon to Out-Patients, Massachusetts General Hospital; Assistant in Surgery, Harvard Medical School.

I HAVE looked up and traced, as far as possible, the end results of the cases of acute and chronic empyema operated on at the Massachu-

setts General Hospital during the period of ten years from January 1, 1901, to January 1, 1911.

I realize that statistics may not be of any great importance or especially interesting, but they are of a certain value if they bring out facts that have not been realized before, and perhaps make it possible for better surgery to be done.

There has been a high mortality in the acute cases and a good many of them have become chronic. In going over the records of some 269 cases, and seeing many of those who return in answer to letters sent to them, I have tried especially to find out why the mortality was so high and how it might be reduced.

During this period of ten years there were 269 cases of acute empyema operated on. I have traced the end results in 154 of these. The remaining 115 cases I have been unable to trace; letters have been sent to the patients, then to family doctors, and finally to town clerks, but without success. A large number of patients were foreigners and they have probably drifted to other towns.

Out of the 154 cases that have been traced, there were 54 that died following operation, giving a mortality of 20%. One hundred cases left the hospital alive; 68 are well at the present time. By this I mean that there is no discharging sinus, no bad effects from the operation, and they are able to attend to their regular occupation. Twenty have become chronic. These have a persistent sinus and a cavity with a much thickened pleura, as a rule. The remaining 12 have died since leaving the hospital: one died from an accident, one from diphtheria, three from kidney disease, one from tuberculosis, one from scarlet fever, one from meningitis, one from heart disease; in three cases the cause of death is not known. There has been, apparently, no connection between the cause of death and their empyema.

An autopsy was performed on 30 of the cases that died following operation: 14 died from septicemia, five from pneumonia, three from pyemia, one from peritonitis, two from multiple abscesses of the lung, one from defective closure of the foramen ovale and thrombosis of the left pulmonary artery, in four no definite cause was found. The commonest cause of death was septicemia; the majority being streptococcus septicemia and a few pneumococcus septicemia. I cannot report on any definite cause in the other 24 as there were no autopsies performed on these.

There were 35 cases of chronic empyema operated on during this period of ten years. I have traced the end results in 23: 15 are entirely well; four did not improve by operation, that is to say they have a persistent sinus and are practically chronic invalids; two cases died following operation; two cases have died since leaving the hospital, cause of death not known. Of the two cases that died in the hospital, one had an autopsy performed, the cause of death being adenocarcinoma of the main bronchus and extensive bronchiectasis.

End Results of Operations for Chronic Empyema.

	Number of Cases.	Well.	Not Well.	Died Following Operation.	Mortality.	Died at Home.	Not Traced
Decortication of lung	5	3	1	1	20%		
Excision of ribs Pleura curetted	21	7	2	1	5%	2	9
Excision of ribs Parietal pleura excised	4	2					2
Sinus explored, curetted, etc	3	3					
Excision of ribs New cavity drained	1		1				
Excision of ribs Old drainage tube removed	1						1
	35	16	4	2		2	12

Many of the cases were desperately sick when they reached the surgeon, having had a severe pneumonia.

I feel that the cause of many of the bad results was that the diagnosis was not made early enough and that the operation was not done soon enough. The earlier the diagnosis and the earlier the operation the better. I believe that one should operate when aspiration shows the serum to have a good many leucocytes in it rather than wait until it becomes pus.

A good many cases are not drained at the bottom of the cavity so that there is a certain collection of pus that does not drain easily. If in exploring a cavity through the first incision one is not at the bottom, I believe a second incision should be made, provided the patient's condition allows it.

Clinical Department.

REPORT OF A CASE OF CONGENITAL MULTIPLE CYSTIC DISEASE OF THE KIDNEYS IN WHICH ONE KIDNEY WAS REMOVED.

By Francis S. Watson, M.D., Boston.

The case of the patient which is here reported is thought worthy to be published because of the fact that the conditions existing in the kidney which determined its removal were somewhat exceptional, though by no means unknown, and because the patient having multiple cystic disease of the second kidney nevertheless has lived for six and a half years since the operation and has been well enough to work during the larger part of that time.

The patient, a young man twenty-five years of age, was admitted to the surgical service of the Boston

City Hospital in March, 1908, having been attacked four days previously while being in good health so far as he was aware, with severe pain in the left loin and left upper quadrant of the abdomen.

He had vomited once or twice at the onset of the pain but not since. When admitted his temperature was 100.5°, pulse 90, full and regular, tongue coated. He was feeling weak and somewhat exhausted, was pale of complexion, and looked a sick man. Physical examination was negative except with regard to the right side of the abdomen. On this side the abdominal muscles were tense, and there was a decided sense of resistance to palpation. A tumor of large size could be felt occupying the right renal region and extending forward and downward to the border of the ilium. It presented the usual characteristics of a renal tumor. Cystoscope and ureteral catheterization showed the bladder to be normal. The urine drawn from the left ureter showed distinct differences from that which was obtained from the right one. Urine from left kidney had a sp. gr. of 1009, was pale in color, contained a good deal of pus and a considerable amount of microscopic blood. Albumen in larger quantities than would correspond merely to the blood present. No abnormal renal elements; casts or renal epithelium, or crystals, etc., were found. Urea diminished. The urine from the right kidney had a sp. gr. of 1018, was of normal color, and showed a faint trace of albumen. Urea normal in quantity, color normal, solid constituents practically normal, no pus, an occasional hyaline cast. The last named, and the trace of albumen were the only abnormal elements present in the urine from that kidney. The right kidney was palpable and found to be larger than normal, however.

There was no tenderness on pressure over the right kidney or tension of the abdominal muscles, as on the left side of the abdomen.

There was no history suggestive of renal calculus, other than the present attack, but radiographs were taken of both kidneys and ureters, which failed to show the presence of calculus.

Diagnosis. Long-standing hydronephrosis with recently supervening infection of the left kidney and its conversion to pyonephrosis.

Operation. March 30, 1908. The left kidney was exposed by the lumbar incision parallel with the outer border of the quadratus lumborum muscle. This incision was extended later by a transverse cut from its upper end in order to permit the removal of the very large kidney which was found to be present.

The kidney was seen to be the seat of polycystic disease. It was about 22 cm. in length and ten cm. in width. A considerable number of the cysts within view were distended with blood, there were two areas of suppuration visible and in two other parts of the organ's surface a process of gangrene was beginning.

It was felt that the patient's life would be sacrificed if the kidney were allowed to remain, and despite the great probability that the second kidney was involved in the same condition of cystic disease, it was decided to remove the one that had been exposed.

The organ was too large to allow of its being taken out entire, and it was necessary to resect a part of it before this could be done. After being removed, another and larger era of gangrene was revealed nearer the upper pole of the organ, and on cutting the kidney in two a cavity filled with pus and of the size of a turkey's egg was laid open.

Further examination showed that there were two or three of the branches of the renal vein which were plugged by thrombi. The condition of the organ made evident the wisdom of the decision to remove it.

The patient made a rather slow but excellent recovery. Shortly after leaving the hospital the urine from the right or remaining kidney was free from pus and showed only the abnormal elements in the urine that have been mentioned above. The patient has been seen by the writer on four or five occasions since, the last of which was a few days since on Nov. 23, 1914, or six years and nearly eight months after the operation. Despite the fact that the urine now contains pus, is of low specific gravity and has a rather large percentage of albumin, the man's general condition has been progressively better during the past year than at any previous time after the operation. He says, however, that he feels very weak and that during the past four months or so he has had rather frequent recurrent vomiting and loses his appetite and strength entirely during these times; between these attacks he has a good appetite and says he digests his food apparently very well.

The case seemed to the writer to present certain features of interest, chief among them, that while it is always regarded as a grave mistake to remove a polycystic kidney under ordinary conditions, because of the great probability of the actual presence of, or soon to be developed, disease of the same character in its fellow organ of the opposite side, yet there are conditions which may exist in one of the kidneys which so greatly imperil life at a given moment that there is far greater danger in leaving the kidney in which they exist in the body than in taking it out. The chance of prolonging the life of the patient to an important degree under these conditions will be indicated or its contrary be suggested by the evidence of good or poor functional condition of the kidney of the other side at the time when the question of nephrectomy arises. If that kidney is shown to be seriously involved already, it is, of course, obvious that it would be of little or no avail to remove its fellow organ, no matter if its condition was such as to immediately endanger life were it allowed to remain. If, on the other hand, the urinary examinations show that the functional condition of the kidney that is to remain after the operation is still capable, it would be a mistake not to remove its fellow under such conditions as were found in the case here reported.

The other point that is of interest is that a patient in whom the second kidney, that is to say, the one that is not to be operated upon, is functionally good at the time the operation is contemplated, the patient may very probably secure a fairly long term of life, after the nephrectomy and will have his life saved from the danger that is at the time imminent. Moreover, there are a few exceptional cases in which the disease is and remains unilateral, and in these

there is no reason why the patient should not after being freed from the danger threatened to life by the conditions in the kidney that is involved in the disease called polycystic, live as long as most people do following the removal of the affected kidney.

When therefore a polycystic kidney is found to present such conditions as those found in this case, namely, areas of gangrene, and collections of pus, whether the cystic condition be very far advanced or not, it should be removed unless the urinary examinations of the product of the opposite kidney indicate that it, too, is too far involved in the cystic process to give a period of life afterward that is not sufficiently important to be considered. Then only would one refrain from doing a nephrectomy on its mate.

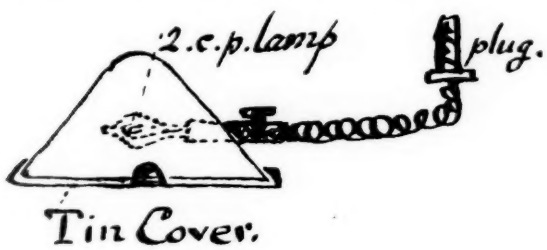
New Instrument

A CHEAP ELECTRIC HEATER.

By Edward von Adelung, M.D., Oakland, Cal.

The following device has been used as a substitute for a rubber hot-water bag for over two years, and has proven more effective, more convenient, and cheaper. So much so that I have decided to put it into print.

The outfit consists of a two-candle power *carbon* filament lamp in an ordinary metal, scoop-like reflector (as sold in all electric stores), with sufficient cord and a plug to connect with a convenient fixture. The reflector is converted into a metal box by a sheet of tin which is cut the proper size to close the open side of the reflector, leaving small ears to be bent over to hold the tin on. To prevent the metal from coming in contact with the skin, the box is slipped into a flannel or cotton bag with a draw-string. The arrangement is made clear by the sketch.



A sixteen candle-power lamp burning twenty-four hours in this box will not light bed clothes, —nor even paper. So that with a two candle-power lamp there is absolutely no danger of fire. Still such a small lamp yields all the heat that one can stand.

Many of my patients find the device a very great comfort. The ease with which one can use it without getting out of bed renders it especially convenient, and gives it a great advantage over the rubber bag. It cannot leak. In sickness it is superior to the water bag or bottle because it maintains its temperature, and is not heavy. When placed over cloths rung out of hot water, and the whole covered with flannel, a poultice is obtained superior to the ordinary poultice, and not requiring renewal. Its many applications in health and in sickness suggest themselves.

Any electric house can put the parts together at a cost not over two dollars. The amount of current used is very small, and the cost of maintenance is practically zero.

Medical Progress.

THE BACTERIOLOGY OF THE GASTRO-INTESTINAL CANAL IN INFANCY. A SUMMARY.[1]

By John Lovett Morse, M.D., Boston,

and

Fritz B. Talbot, M.D., Boston.

BACTERIOLOGY OF THE MOUTH.

The infant's mouth is sterile before birth, but becomes infected from the mother's vagina during birth[2] or from the air soon after birth.[3] The variety of organisms present at this time is relatively small, but as soon as the infant commences to take food the flora becomes more complicated. The number of bacteria does not, however, increase. When the infant takes breast milk, there is an increase in the variety of the organisms, and pathological bacteria may even be found in the mouths of healthy babies.[4] Because of the fact that even the purest cow's milk contains more bacteria than human milk it is reasonable to expect that the mouths of babies fed on the bottle will contain a greater variety of bacteria than the mouths of those fed at the breast, and that the dirtier the milk the greater will be the variety of the organisms. There are, however, no data as to whether this is true or not.

After the eruption of teeth, *i.e.* after the infant is six months old, the number and variety of the bacteria increase,[5] and certain micro-organisms, such as the Leptothrix[6] and fusiform bacteria,[7] which are apparently only able to obtain a foothold in the mouth when teeth are present,[8] appear.

It is an open question as to how important a part the bacteria of the mouth play in the digestion processes in the stomach. It is conceivable that these bacteria, especially when there is dental caries, may do harm. It has not been proven, however, that they do.

BACTERIOLOGY OF THE STOMACH.

The same influences which modify the bacterial flora of the mouth naturally modify that of the stomach. Under physiological conditions the bacteria in the stomach play an unimportant rôle. A description of the individual kinds may be found in the works of Escherich,[9] who was a pioneer in this field of investigation. The smallest numbers are found in the stomachs of the breast-fed,[10] and they remain relatively scarce as long as the digestion is normal. When there is indigestion, there is an increase in their numbers. The greatest numbers are found in cholera infantum.[11]

Bactericidal Powers of the Stomach. There is no doubt that free hydrochloric acid is able to destroy bacteria in the stomach,[12] but this action is prevented to a greater or less extent by the fact that the hydrochloric acid is strongly attracted by the proteins of the food and quickly combines with them, thus becoming inert. Furthermore, since the casein in the milk is rapidly coagulated into curds, the disinfecting action of the hydrochloric acid can only be effective on the surface of the curds, and the large numbers of bacteria which are present in the interior of the curds are not reached by it.[13] The number of bacteria in the stomach apparently depends also on the activity of the gastric motility, for the quicker the stomach is emptied, the fewer are the bacteria which it contains. The converse is also true.

Lactic acid fermentation does not seem to play as important a part in the stomach of the infant as it does in the adult, in whom it occurs only when hydrochloric acid is absent. Lactic acid is seldom or never found in the stomach of the breast-fed, but is frequently found in small amounts in the stomach of infants fed on cows' milk.[13]

Butyric acid fermentation is more common[14] and has been found to occur in the stomachs of atrophic infants in which the secretion of hydrochloric acid and the motility are both diminished. The pasteurization or boiling of milk destroys the organisms which produce lactic acid, but does not kill the spore-bearing bacilli which produce butyric acid. The latter cause the formation of butyric acid from carbohydrates and fat and possibly from protein. Whether butyric acid is formed or not depends, according to Tobler, not on the kind of food present, but on the type of bacteria. This may be in part true, because fermentation cannot take place without fermentative organisms. On the other, however, the food components necessary for fermentation must be present in sufficient quantity to supply the bacteria with fermentable material. The lactic acid bacilli and the butyric acid bacilli are the only organisms which usually play a part in the various processes of acid production in the stomach. The other bacteria which form acid are usually found only in the lower intestinal canal.

BACTERIOLOGY OF THE UPPER PART OF THE SMALL INTESTINE.

The upper part of the small intestine, in comparison with the rest of the digestive canal, is relatively free from bacteria, both in the breast and in the bottle-fed infant. Hess[15] studied the bacteria of the duodenum during life by an ingeniously devised modification of his duodenal catheter. He found that in new-born infants, who had received no food, the duodenum contained very few organisms, only from one to three growing on a plate. The organisms were staphylococci, gram-positive and gram-negative bacilli. Colon bacilli were not found. Infants in the first week of life also had very few bacteria in the duodenum and these were of the same varieties as those found soon after birth. There was more or less similarity between the bacteria of the stomach and the duodenum. The staphylococcus was the organism most frequently found at this age. Hess could not establish any relation between the amount of hydrochloric acid in the stomach, or of bile in the duodenum, and the number of bacteria. The presence or absence of icterus made no difference in the bacteriology of the duodenum in these babies. Cultures from the duodenal contents of older breast-fed babies showed from one hundred to two hundred colonies per plate. Those from bottle-fed infants showed many more.[16]

There is evidence that, while the duodenum may be practically free from bacteria during the intervals between digestion, there is a relatively large population in the small intestine while the food is passing through it.[17] According to Ficker[18] and Moro[19] the flora of the upper small intestine is composed principally of short gram-negative rods (colon bacillus and bacillus lactis aerogenes) with an occasional isolated bacillus bifidus communis, bacillus acidophilus and butyric acid bacillus, and enterococci.

Under pathological conditions there may be an enormous increase in the bacteria in the small intestine. Prolonged fasts are regularly followed by an increase in the number of bacteria,[18] while all processes which cause an inflammation of the mucous membrane of the small intestine result in a diminution of its protective action against bacteria and a consequent increase in their numbers.

Moro[20] believes that there can be an endogenous infection of the small intestine. Such an infection is probably present in most disturbances of nutrition, both acute and chronic. The epidemic of severe diarrhea, associated with the presence of inflammatory products in the stools (blood and pus), described by Escherich,[21] has been used as evidence for this point of view. The infants attacked were all young, their ages varying between four and ten months. The stools contained bacteria which were proved to be, almost without question, "aciduric"[22] or acidophilic organisms. These organisms were probably identical with those which are normally

present among the flora of the healthy nursling. Logan,[23] on the other hand, was unable to show that any colon-like organisms from cases with diarrhea showed any greater virulence to guinea-pigs than the same organisms from babies not suffering from diarrhea.

BACTERIOLOGY OF THE LOWER PART OF THE SMALL INTESTINE AND OF THE LARGE INTESTINE.

There are relatively few bacteria in the healthy small intestine down to the lower part of the ileum. There they begin to increase in number, so that when the large intestine is reached they are very numerous. The types of bacteria which are commonly found, according to Kendall, are as follows[22]: The more commonly recognized bacteria are the B. bifidus of Tissier, the Mic. ovalis, the B. coli, the Bact. aerogenes, and the B. acidophilus (Moro). These make up the normal nursling fecal flora. The Bact. lactis aerogenes appears in the upper levels of the tract, that is, the duodenum and jejunum; the Mic. ovalis in the lower jejunum and in the ileum to the ileo-cecal valve; the B. coli and the B. acidophilus in the region of the ileo-cecal valve, while the B. bifidus appears to dominate the ascending and transverse colon. This cannot be accepted without reservation since intestinal bacteriology is by no means so simple as it would appear from the foregoing statement. The remainder of the tract to the anus is relatively poorly populated in relation to the cecum so far as living bacteria are concerned. This is due in part to the considerable degree of desiccation of the fecal contents of the intestines and in part to the accumulation of waste products, which appear to inhibit the development of bacteria.

The character of the bacteria in the large intestine depends largely upon the food,[19] and, since human milk is a relatively homogeneous food, the tendency of the bacteriological flora of the breast-fed is toward uniformity. The bacteriological conditions in the artificially-fed are, as would be expected, less consistent, because there is no uniformity in the food which they receive. The distinctive features of the stools of the artificially-fed are the relative increase of gram-negative bacilli of the colon-aerogenes type and of coccal forms of the Mic. ovalis type. Coincidently, there is a decrease in the number of organisms of the B. bifidus type. The B. acidophilus is relatively more numerous and the B. bifidus less numerous.

BACTERIOLOGY OF THE STOOLS.

The first stools (meconium) of the new-born are sterile, but they become infected shortly after birth. Within eighteen to twenty-four hours after birth, bacteria make their appearance in the stools and the meconium begins to disappear. The kinds and the number of bacteria which are found depend largely upon the season and the environment of the infant.[24] This is a period of mixed infection. The following organisms have been found in meconium: B. subtilis, B. coli,[21] B. bifidus, B. putrificus Bienstock, butyric acid bacillus,[16] and enterococci.[25] These organisms undoubtedly gain entrance to the intestinal canal through both the mouth and the anus. Meconium is a poor culture medium, probably because of its small water content.

The B. bifidus appears about the beginning of the third day and persists throughout the nursing period. It is an obligate anaerobe (Kendall), gram-positive, and is the most characteristic organism of the nursling's stool. It is apparently independent of the quality of the stool and is present in the classical golden-yellow, homogeneous, pasty stool as well as in those which deviate from this character in consistence and color.[16] Although the B. bifidus dominates the typical field, other gram-positive bacteria can always be found. Other bacteria that have been described in the stools of the nursling are cocci, the B. lactis aerogenes, the B. coli, the B. acidophilus, butyric acid bacilli, the B. mesentericus and the B. aerogenes capsulatus (Welch).

The bacteriology of the stools of the artificially-fed infant is much more complicated than that of the breast-fed. No characteristic type of bacteria predominates, but there is a mixture of bacterial types. Culturally, the same species are found as in the stools of the breast-fed infant. The general picture is, however, apt to be gram-negative in contradistinction to that of the stool of the breast-fed infant, which is usually gram-positive. The B. coli communis and the B. lactis aerogenes are the most numerous of these predominating gram-negative bacteria. A peptonizing bacillus, which is almost always absent from the stools of the breast-fed, has been recorded by Rodella.[26] Passini[27] found three types of butyric acid forming organisms, and isolated peptonizing organisms from the stools of apparently normal bottle-fed babies. The B. putrificus, the most typical example of a purely proteolytic organism, has been found in several cases.

The discussion as to the causes which influence the appearance and disappearance of certain bacteria is of more than polemic interest, since it may lead to some conclusions which will have a practical application. Kendall's[24] view is given as follows: "The intestinal tract is sterile at birth, because the uterine cavity is sterile. The first infection takes place adventitiously. Any organisms which enter by the mouth or through the anus in the bath water, which can exist at body temperature, will find lodgment in the intestinal tract and may temporarily grow there. Many of the bacteria which thus succeed in entering the alimentary canal are spore-forming. During this period the food which is presented to them is largely detritus of fetal origin. At the beginning of the third day, when the breast milk has had a chance thoroughly to permeate the intestinal tract, new organisms appear, organisms which have a definite relationship to the type of food which is presented to them. It

will be remembered that breast milk contains essentially 7% of lactose, about 3% of fat, and but 1½% of protein. Carbohydrate is, therefore, the dominant food. It is noteworthy that the organisms which appear in response to this diet are those whose metabolism is intimately associated with the utilization of sugar. These organisms thrive but poorly in a medium from which sugar is excluded. When other foods begin to replace the breast milk there is a definite change in the types of bacteria represented in the intestinal contents. The obligate fermentative bacteria, such as the B. bifidus, are replaced by more plastic forms and the B. coli, which can accommodate their metabolism rapidly to dietary alterations. The B. coli, for example, can thrive equally well on a medium in which carbohydrate is absent. It might appear from this rather definite alteration of types of bacteria in the intestinal tract following changes in the character of the food, that the food alone determined the intestinal flora. This may be somewhat influenced by the intestinal secretions. The essential feature, however, is the very direct relationship between food and bacterial response to it. This recognition of a relationship between food and bacteria in the intestinal tract is important in considering the intestinal flora, for it correlates the metabolism of the flora with the effects which it produces rather than attempting to establish indistinct relations between the morphology of the flora and these effects.'' These conclusions are supported by the work of Sittler,[28] and Bahrdt and Beifeld.[29]

Further investigations are necessary to throw more light on this subject, which is not as simple as it appears. It seems probable that other factors besides the sugar alone may play an important part in determining the intestinal flora, most important of which is the relation of the sugar to the other food components, especially those which favor putrefaction.[30]

It is interesting to note that Noguchi[31] in studying the growth and characteristics of the B. bifidus was able to transform it in the laboratory from the strictly anaerobic type (B. bifidus, Tissier) to the facultative aerobic type (B. acidophilus, Moro) and back again to the anaerobic type. Logan[23] believes that the B. bifidus of the breast-fed is replaced by the B. acidophilus in the bottle-fed.

The Number of Bacteria in the Stools. The most reliable figures as to the bacterial content of infants' stools are those obtained by Strassburger's method.[32] He found that the bacterial content of infants' stools was as follows:

TABLE.

AGE.	FOOD.	DIGESTION.	PERCENT. OF DRIED STOOL.
2 months	Cow's milk	Normal	11.5
4½ "	" "	"	42.3
5 "	" "	?	35.2
2 "	Human milk	Normal	25.8
1 "	" "	Dyspeptic	61.4

Leschziner[33] found that 2% to 28.4% of the dried stool of the healthy breast-fed infant was composed of bacteria, while from 6.52% to 29.4% of the total nitrogen was derived from bacteria. The newer and more perfect methods of Kramsztyk[34] and Klotz[35] show that the number of fecal bacteria varies with the kind of food and that it is the chemical composition of the food rather than its bacterial content which is of significance.

Escherich[36] has shown that sterilization of the food has very little or no influence on the number of fecal bacteria.[37] Kramsztyk found the smallest number in the stools of infants fed on the breast. He found more in the stools of those fed on diluted cows' milk, and most in the stools of those taking both human and cows' milk. Carbohydrates, especially in the form of malt extract, increase the number of bacteria. Klotz, whose figures are somewhat higher, found that the maximum amount of fecal bacteria in the dried feces is from thirty to thirty-six per cent. He also found the smallest numbers in soap stools. Strassburger, however, found that 60% of the dyspeptic stool was made up of bacteria. Although counting the number of living bacteria is attended with many difficulties, there can be but little doubt that a large proportion of the fecal bacteria are dead.[38]

Pathogenic Bacteria. The typhoid bacillus and the various types of paratyphoid bacilli may be present in the stools of infants under the same conditions as in adults. The same is true of the tubercle bacillus and the cholera bacillus, as well as of other uncommon micro-organisms, such as the bacillus of anthrax.

The various types of the dysentery bacillus are frequently found in the stools of infants. So also is the gas bacillus, as well as other closely allied micro-organisms. When these organisms are found in considerable numbers in association with the symptoms of disease of the intestinal tract, as in infectious diarrhea, they are, in most instances, the cause of the disease. This is also the case when large numbers of streptococci are found in association with fever and diarrhea. The presence of a few of these organisms in the stools in cases of diarrhea does not prove, however, that they are the cause of the symptoms. They also may sometimes be found in small numbers in the normal stools of apparently healthy infants. Under these circumstances they are to be regarded simply as saprophytes.

REFERENCES.

[1] G. Bessau in Tobler: Allgemeine pathologische Physiologie der Ernahrung und des Stoffwechsels im Kindesalter, Wiesbaden, 1914, has been used freely in this article and many of the statements have been taken directly from it. It may be consulted by those who wish to go into the subject more deeply.
[2] Kneise: Sittler quoted by Tobler.
[3] Campo: La Pediatria, 1899, vii, 229.
[4] Doernberger: Jahrb. f. Kinderh., 1893, xxxv, 395.
Herzberg: Deutsch. med. Woch., 1903, xxix, 17.
[5] Noblecourt and Vicaris: Arch. gen. de Med., 1905, 2, p. 3201, ref. Monatsschr. f. Kinderh., 1905-6, iv, 640.
[6] Oshima: Arch. f. Kinderh., 1907, xlv, 21.
[7] Uffenheimer: Münch. med. Woch., 1904, p. 1198 and 1253; Ergebnisse d. inn. Med. u. Kinderh., 1908, 11, 304.
[8] For a more detailed account of the flora of the mouth Kuster

in Kolle Wassermann Handbuch, 2 ed., Jena, 1913, vol. 6, p. 435, may be consulted.

[9] Escherich: Die Rarmbakterien des Säuglings, Stuttgart, 1886.
[10] Van Puteren: Ref. Zeitschr. f. Mikroskopie, 1888, v, 539.
[11] Seiffert: Jahrb. f. Kinderh., 1891, xxxii, 392.
[12] Hamburger: Ueber die Wirkung des Magensaftes auf pathogene Bakterien, Inaug. Diss., Breslau, 1890, quoted by Tobler.
[13] Tobler: Ergeb. d. inn. Med. u. Kinderh., 1908, 1, 495.
[14] Cassel: Arch. f. Kinderh., 1890, xii, 175.
[15] Hess: Ergebnisse der Inn. Med. and Kinderheilk., 1914, xiii, 530.
[16] Moro: Jahrb. f. Kinderheilk., 1905, lxi, 870, may be consulted for the literature.
[17] Moro: Arch. f. Kinderheilk., 1906, xliii, 340.
Kohlbrugge: Cent. f. Bakt. Orig., 1901, xxix, 571.
Landsberger: Diss. Königsberg., 1903. Quoted by Kendall.
[18] Ficker: Archiv f. Hyg., 1905, liv, 354.
[19] Moro: Arch. f. Kinderheilk., 1906, xliii, 340.
[20] Moro: München. Gesellsch. f. Kinderh., 1907, xi, 15.
[21] Escherich: Jahrb. f. Kinderh., 1900, lii, 1.
[22] Kendall: Jour. Mer. Research, 1911-12, xx, 117.
[23] Logan: Jour. Path. and Bact., 1914, xviii, 527.
[24] Kendall: Wisconsin Med. Jour., 1913, xii, No. 1.
[25] Sittler: Habilitationsschr., Würzburg, 1909. Quoted by Tobler.
[26] Rodella: Zeitschr. f. Hyg., 1902, xli, 466.
[27] Passini: Zeitschr. f. Hyg., 1905, xlix, 135.
[28] Sittler: Centralbl. f. Bakteriol., 1908, xlvii, 14 and 145.
[29] Bahrdt and Beifeld: Jahrb. f. Kinderh., 1910, lxxii, Erganzungsheft 71.
[30] For a discussion of the action of the different sugars see Tobler.
[31] Noguchi: Jour. Exper. Med., 1910, xii, 182.
[32] Strassburger: Zeitschr. f. klin. Med., 1902, xlvi, 413.
[33] Leschziner: Deutsch. Aerzte Zeitung, 1903, No. 17, 169.
[34] Kramsztyk: Zeitschr. f. Kinderh., 1911, 1, 169.
[35] Klotz: Jahrb. f. Kinderh., 1911, lxxiii, 391.
[36] Escherich: Centralbl. f. Bacteriol., 1887, 11, 633 and 664.
[37] For further literature consult Gerhard Erg. d. Physiol. (Asber-Spiro) 1904, 1, 107.
[38] Eberle: Centralbl. f. Bacteriol., 1896, xix, 2.

Reports of Societies

CLINICAL CONFERENCE, NEUROLOGICAL INSTITUTE, FIRST DIVISION, NEW YORK.

NOVEMBER 12, 1914.

DISSEMINATED SCLEROSIS, MID-BRAIN TUMOR, GENERAL PARESIS. DIFFERENTIAL DIAGNOSIS.

DR. JOSEPH COLLINS presented a case illustrative of the great difficulty which one has at times in disguishing between disseminated sclerosis, mid-brain tumor and general paresis. The patient, a married woman 35 years old, had nothing in her family or personal history worthy of note, save that when she was 20 she suffered from huskiness of the voice for some days. When she was 30 years old huskiness of the voice developed again and she consulted a laryngologist in Norfolk, Va., who, she says, removed a growth from the throat.

The present illness began suddenly in March, 1913, with (1) a sensation of choking. She was unable to speak for five or ten minutes, after which she recovered completely. A week before she had been shocked by the sudden death of a woman who boarded at her house. She was quite well until January, 1914. (2) Suddenly the arms and legs felt numb, stiff, and a sensation of pins and needles in the extremities, and afterward she experienced awkwardness in using the hands. She made no attempt to walk during the attack. This lasted about five minutes. Off and on until October, 1914, she had similar attacks, always with complete recovery in the interim. (3) In July, 1914, while walking on the street the right leg began to jerk so that she could not walk. The jerking gradually extended to the right arm, to the right side of face, the entire right side. She became unconscious about ten minutes after the jerking started and remained so for about three minutes. She was told that the jerking persisted during this time, and that she frothed at the mouth, and made a gurgling sound in her throat. No injury or incontinence. (4) After the attack she could not talk for about fifteen minutes. Since then her speech has been hesitating and it has been difficult for her to articulate words although there is no difficulty in thinking, reading, or understanding words. Speech has gradually become worse since July. There has been no remission in the symptoms. (5) Since the attack in July there have been transient attacks of diplopia. (6) Up to October 1st she had several twitchings of the right leg and arm, without loss of consciousness. During the convulsion she could not speak. After the attacks, she would have violent occipital headache, nausea, and at times vomiting. No scotomata or dizziness. Since August at times she has a sensation of tightness in the left side of the head and a "funny" noise like the noise of the elevated cars. The sound is in the head and not the ear. These attacks last one to three minutes and are not associated with any other symptom.

In September her relations noticed that she swerved to the left when she walked. She had noticed that she laughed involuntarily when talking at times. Also felt as though nose pulled to the left and downward.

On October 12th, she caught a heavy cold and had severe occipital headache. On October 15th while writing the right eye-lid began to twitch, soon the twitching also involved the whole right side of the face. Then she felt as though choking and was unable to speak for about a half hour. Had severe headache for two days and vomited several times.

On Oct. 19th she again had a severe headache and was unable to talk for about ten minutes.

On Nov. 7th after returning from a walk, the left leg suddenly began to jerk. The attack lasted five minutes. After this she had another severe headache. Later in the day she was unable to talk for about a minute. During the past year she has lost 15 lbs.

Physical Status.—No evidence of trophic disturbances. The station is slightly unsteady but there is no distinct rombergism. Gait is quite normal. There is a moderate, but distinct, lessened innervation of the right facial muscles of the supra nuclear type. The tongue is protruded slightly to the right. The palate rises normally on volition. Laryngeal examination negative. No musclar weakness of the arms and legs. There is a slight "intention" tremor of the right hand, which varies in degree from time to time. On two occasions, a slight twitching of the muscles of the right lower face was present when showing the teeth. There is no distinct manual or pedal incoördination. The deep reflexes are all quite active. The right knee jerk is slightly more active than the left. Babinski, Oppenheim, Gordon and Hoffman phenomena are absent. There is no ankle or patellar clonus. The right abdominal and epigastric reflexes are normally active; the left absent. No weakness of the extrinsic muscles of the eyes. There is a slight transient nystagmus on looking upward. The pupils are equal, 3.5 mm. in diameter, rather irreguar, and react sluggishly to light, but they react. The fundi are normal.

Examination of the hearing apparatus by Dr. E. B. Dench shows a hyperaesthesia of the auditory nerves to the galvanic tests and failure of the normal overpointing reaction on the left labyrinth is stimulated with cold water.

Sense of position, pain, touch, temperature, reaction time and localization is normal throughout. No stereognosis. The speech is syllable, stoccato in type: both in spontaneous speech and repetition of test phrases.

The Wassermann reaction of the serum and cerebrospinal fluid is negative. The latter shows two cells and an excess of globulin. The urine and blood are negative. Mentally, the patient shows nothing abnormal except moderate excitability and emotionalism which is probably constitutional.

In brief then this patient's conspicuous symptoms are:—

1. Dysarthria.
2. Recurrent headache associated with nausea and at times with vomiting.
3. "Attacks" attended with some perturbation of consciousness, topical paresthesia (side of face, foot, leg) and involuntary movement of the extremities of one side of the body, not always the same side.
4. Transient diplopia.

The physical signs are apparently most trifling:—

1. A very slight difference of innervation of the sides of the face, the right side being slightly sluggish.
2. Unelicitable abdominal reflex on the left side, and
3. Pupils that are sluggish in their response to light.

The speech disturbance is "typically," one may say, that of general paresis. She stumbles over words, elides and slurs syllables, and her articulatory efforts are slow. This disorder of speech is variable in intensity. It is always accentuated after a so-called attack, and when she remains for a considerable time free from attacks it is much less noticeable. Another sign of general paresis is the condition of the pupils. They are slightly irregular and sluggish, though responsive to light, a condition which one who examines many patients with syphilitic nervous disease is apt to call "beginning Argyll-Robertson pupils." Yet despite these two signs we must without reserve rule out general paresis because of the absence of any disturbance of the mental content, and the absence of the Wassermann reaction in the blood serum and cerebrospinal fluid.

On first thought the most probable diagnosis is disseminated sclerosis. The speech disturbance, the transient attacks of diplopia, the absence of the abdominal reflex on one side are all suggestive of this disease. Moreover the patient is of the appropriate age for the occurrence of disseminated sclerosis. But in view of the other striking symptoms which she has, namely the headache, nausea and vomiting, the transient regional parethesias of "an explosive nature," the periodic twitchings or convulsions of the extremities of one side of the body and the two attacks of loss of consciousness followed by what must be described as a queer mental state, the diagnosis of disseminated sclerosis must be abandoned. This leaves us in the position of being obliged to make the diagnosis of mid-brain tumor. As a matter of fact aside from the absence of choked discs or papilledema the clinical picture which she presents is fairly typical of mid-brain tumor, if any clinical picture can be said to be "typical" of tumor in this location. It need not astonish us that the optic nerves are not involved in this case, granting that a tumor exists. There are many cases on record of mid-brain tumor in which papilledema did not develop until late in the course of the disease. The occurrence of choked disc depends entirely upon when the tumor produces sufficient increase in intracranial pressure to cause an optic neuritis.

The attacks which she has, must, I think, be interpreted as lower level fits, using the term which Hughlings Jackson introduced to describe a form of convulsion caused by irritation of the motor pathway below the level of the corona radiata. As a matter of fact the onset of her symptoms, the course of the disease, or what may be called the behaviour of the symptoms, and the grouping of the symptoms at the present time, are all more in keeping with the diagnosis of mid-brain tumor than with any other diagnosis. In view of the fact that some tumor growths are influenced by arsenic I propose to give her salvarsan and to show her at some future conference.

DR. T. J. KEYSER presented a case of

HERPES OF THE 5TH NERVE OCCURRING IN A WOMAN OF 54, SUFFERING FROM DIABETES.

The patient came to the dispensary on Nov. 9 complaining of severe paroxysms of pain in the right shoulder and right side of neck, face and head.

The present illness began two months ago with severe toothache. Two weeks later she went to a dentist and had the right lower second molar tooth filled. Immediately after this the pain became very severe, extending over the distribution of the lower branch of the trigeminal nerve. The right side of the face became swollen and tender. Gradually the pain extended to the shoulder, neck and head. It occurred in paroxysms lasting two to three minutes. She describes the pain as of an intense burning character. It begins in the shoulder and extends to the face and the head. It is so severe that she screams with pain, and hypodermics of morphia are required to relieve her.

Three weeks ago a herpes suddenly appeared over the right upper chest, shoulder and right side of neck. The burning pain continued as before. On Nov. 8, the offending tooth was pulled. The doctor who was treating the patient before admission found sugar in the urine.

The patient is rather emaciated and very pale. However the mucous membranes are of a good color; there is a moderate general muscular weakness. There is evidence of recent herpes over the right shoulder, the chest to the level of the second rib, the back to the level of the second thoracic vertebrae, the right side of the neck and posterior aspect of the ear. The face showed no involvement. There seems to be some hypersensitiveness to cold and touch over this area. However, the patient is very apprehensive and often complains before she is touched. There is a marked tenderness of the greater occipital, 1st and 2d thoracic, radial and median nerves and the brachial plexus on the right. There is marked pyorrhea alveolaris, but practically no dental caries. Hearing not defective.

There is no tremor or incoördination. The knee jerks are obtained only on reinforcement, the ankle

jerks are absent. The deep reflexes of the arms are present and equal. Babinski and Hoffman phenomena do not exist. There is no disturbance of sensation and postural sense. The patient complains of pain on pressure over all of the muscles and nerves of the lower extremities. This tenderness varies a great deal on different examinations.

There is evidence of consolidation of the base of the left lower lobe, the percussion note is dull, the breath sounds are high-pitched, bronchial with prolonged expiration and bronchophony. A few moist râles are heard at both bases.

The serum Wassermann is negative. The urine shows ½% of sugar, a trace of acetone and albumen. Blood pressure, 160. The blood examination is negative except for a leucocytosis of 86%.

The case is of interest in that the onset of pain over the distribution of the lower branch of the right trigeminal nerve following caries of a tooth suggests an ordinary trifacial neuralgia. However, the further extension of the pain over the distribution of the right cervical and first and second thoracic nerves, the development of herpes, and the tenderness of the nerve trunk and calves, recurring in a patient with diabetes, suggests rather the diagnosis of a mild multiple neuritis of diabetic origin.

PERIODIC RECURRING TIC RESEMBLING EPILEPSY.

DR. J. M. STEPHENSON presented from the Second Division of the Hospital a young woman 18 years old, born in this country of Swedish parentage. Father is 46 years old, living and well; mother 58, living and well. Patient is the seventh of nine children, of whom five died in infancy. Her mother first married at 25 years; first child died at one week; second child, born one year later, now 31 years old, apparently normal; third child born two years later, died at three years, convulsions; fourth child, girl, living and well, now 27 years old; fifth child died at three years, convulsions "teething"; the father of these children died of grinders' consumption. The mother married again at the age of 37, her husband being 25 years old at the time. First child of this marriage, a girl, living and well, now 21 years old; seventh child, the patient; eighth child still-born 2½ years later; ninth child died at two years(?), was never well.

Gestation apparently normal; labor relatively normal; low forceps, 10 pounds. Breast fed one year; talked and walked at one year; strong and healthy during infancy. Whooping cough and measles at 1½ years without apparent sequelae; spinal meningitis(?) 1903 (at the time of an extensive epidemic of actual spinal meningitis in this vicinity) starting with bunches in the neck, followed by pain in the head and back; in bed for many weeks and very sick. Since then she has never been as strong and well as previously. Sometime later she had influenza with inflammation in one ear, which broke and ran for some time and left her a little deaf. Later she had neuralgia about the heart with sinking spells, which usually consist in the occurrence of black and red bunches on the heels, then on the palms of the hands, and then it would go to her head. She would scream and then faint for two or three minutes and lie so still that they could not hear any breathing or beating of the heart. This occurred about twice a day for two weeks, and she was under the care of a physician, who called the condition nervous prostration. He made her get up and walk around, and after that she was all right. Three years ago, at the age of 15½ years, she had inflammatory rheumatism with swelling and pain in her legs, hands and neck, and was very sick for one week. One year ago she had bronchitis. Tonsils were removed six years ago, before which time she had tonsillitis frequently. She has noted some shortness of breath in rapid walking. One physician said she had anemia; another physician said she did not have any anemia. In January, 1914, she weighed about 140 pounds, but had lost quite a little weight during the previous few months. Menses began at 12 years, were regular, and did not cause much discomfort. She started to go to school at five and was in the eighth grade at the age of 14, when she had to stop on account of the present illness. Since then she has been at home in a small village with her father and mother, and helps about the house.

Since August, 1910, she has had "spells," occurring at intervals ranging from three or four days to one or two months, with a single long interval of 10 months three years ago. I saw her first in January, 1914, and since then these attacks have occurred on the following dates: Jan. 14 and 30 at 9 a.m.; Feb. 26, 10.30 a.m.; March 18, 4.05 p.m.; April 17, 2.35 p.m.; May 18, 3.45 p.m.; June 16, 12.40 p.m.; July 12, August 17, Sept. 16, Oct. 17. During July and August the menses occurred at intervals of two weeks.

The patient describes her condition as follows: "I have these spells: a funny feeling comes in my stomach and chest, and then it twitches me all over. The left side is the worse. They last more than half an hour. I am awfully weak after it and twitchy for several days. My hands and legs shake. I do not lose consciousness and I know what is going on and can talk. I fall down because I can't walk, because my left ankle goes right under me. I usually bite my tongue."

The sister states that the patient usually introduces the attack by saying, "It is coming, mother," and then falls down if she is not caught. Her fingers twitch and close up; she turns her eyes up and her feet in. The next night she shakes the whole bed, but may sleep for a minute of the time, and then wake up with a jump. Afterwards she is very tired for several days.

Patient entered hospital Nov. 7, 1914. Examination revealed a well nourished young woman; musculature well developed; no atrophies; station good; gait good; no ataxia or tremors at rest or on intention.

Pupils round, regular and respond well to L. and A. Mobility O. K. No contracture of fields nor corneal reduced sensibility. Eye report by Dr. Holden, slight astigmatism.

All reflexes were present, fairly active and equal. Plantar responses flexor. Abdominal and epigastric present and equal. Sensations intact. Wassermann negative. Blood showed 83% hemoglobin. Urine negative. Blood pressure ranged between 110 and 122.

On Nov. 10 had an attack described by Dr. McRoberts, the house physician, as follows: "She lay on the bed with legs drawn up, partly on back and partly on right side. Left arm and leg jerking in irregular violent clonic spasms. Occasionally the left side of mouth would twitch and the right arm and leg shook slightly; mostly from the general mo-

tion the body was thrown into by the left-sided spasms.

"She complained of pain in her neck and hip, and asked that something be done for her. She was perfectly conscious throughout the attack, which persisted violently for nearly forty minutes, and in a measure for several hours later.

"She responded to all questions and opened her mouth for examination of throat. Sensation remained equal in both sides of body according to patient's statements. No corneal or pharyngeal anesthesiae. No loss of stereognostic sense in convulsed hand. Pupils responded to light and the accentuated knee jerks were equal. Left ankle jerk more difficult to obtain on account of resistance of muscles, but when obtained was equal in response to right. Plantar response flexor. No clonus.

"No opinion of abdominal reflex can be given on account of continual spasm. No incontinence. Tongue could be protruded and maintained out for examination easily. No headache, no confusion, no increase in severity after commencement of spasm.

"The spasm involved mostly the pectoral and shoulder muscles. The fingers would open and close irregularly and easily flexible with exception of little finger, which was maintained throughout (almost) in tonic contraction."

Patient continued to have the spasms until about ten that evening, when they are said to have disappeared. However, the next morning they were present, and the first impression made was that of hemichoreiform movements. But upon examination the movements were seen to be not the aimless movements of the chorea, but rather the overaction of volitional impulses. The muscles mostly involved were those of the left shoulder, the movements causing adduction and elevation of the arm. At the same time there was irregular flexion and extension of the fingers, with an occasional contraction of the abdominal muscle and diaphragm. The movements at times were slow, again sudden, causing a quick jerking of the arm inward and upward. Attempts to control the movements aggravated them but distraction of attention somewhat lessened them. The spasms have continued, but are gradually lessening in severity. However, upon close observation, you can observe them now.

The question of diagnosis is an interesting one. Three possible diagnoses present themselves, viz.: Jacksonian epilepsy, including also the so-called basal ganglion explosions; hysteria; and tic. It is hard to conceive that one could have seizures so frequently over a period of many years of a cortical or basal origin without showing some organic manifestation, such as increased reflexes, etc. These being absent, I think we can eliminate an organic etiological factor.

The diagnosis of hysteria is always a dangerous one and in my opinion should never be made unless there is at least one of the stigmata of hysteria, not one of which is present in the patient.

By a process of elimination, I arrive at the diagnosis under which I desire to present this case, viz., periodic recurring tic. Here we have a patient of neuropathic constitution, indicated by her previous history, upon which field such maladies develop. We have a young girl who for the past year has had regular monthly "spells," so regular that the family can almost predicate the date. The spells are always of a similar nature, consisting of irregular contractions, involving mostly the shoulder girdle, movements being more those of overaction of normal impulses, aggravated by attempts to control, lessened by distraction, showing none of the findings produced by organic disease of the central nervous system, and none of the stigmata of hysteria.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

MEETING OF WEDNESDAY, NOVEMBER 4, 1914, AT 8 P.M.

The President, DR. JAMES C. WILSON, in the chair.

PAIN AND TENDERNESS IN DISEASES OF THE SPINAL CORD AND THEIR SURGICAL TREATMENT.

DR. CHARLES A. ELSBERG, New York: The tremendous development of abdominal surgery has brought with it a great advance in our diagnostic acumen. Strange to say, however, little attention has been given to the neural origin of abdominal pain. The abdominal symptoms of locomotor ataxia are well known, yet in not a few cases operations have been performed for supposed gastric disease when the real trouble was gastric crises in the course of tabes. During the past five years two patients have been sent into my service in one of the hospitals in New York with the diagnosis of acute appendicitis. In both instances the patients had Pott's disease with irritation of spinal nerve roots, and areas of skin and muscle tenderness in the right iliac region. I have records of three patients in whom various operations had been performed who were finally found to have a spinal tumor or a neuritis of the nerves of the cauda equina. Another patient operated upon for supposed gangrene of the toes with severe pain shooting down the leg was finally relieved by an operation for spina bifida occulta. To understand the distribution of painful symptoms in the extremities it is of value to remember the anatomy of the spinal nerve roots. There is a marked difference between the cervical and upper dorsal, and the lower dorsal and lumbosacral posterior roots. In the latter the nerve fibres which originate from the cord soon unite to form one bundle,—the posterior nerve root; in the former, however, the bundles of fibres which originate from the cord along a line from one to one and one-half centimeters in length do not unite to form the posterior root until near to where they perforate the dura. As a result a tumor may press upon some of the nerve bundles without compressing the entire spinal root. This anatomical arrangement enabled us to understand the early symptoms of a patient from whom I removed an extramedullary tumor of the spinal cord between the seventh and eighth cervical segments, whose first and for a long time only symptom was a painful pin and needle sensation in the index finger of the right hand. At operation the tumor was found to have pressed upon only the lower nerve root bundles of the seventh cervical posterior root. From several cases of this kind I feel justified in making the statement that of the nerve bundles that make up the seventh cervical posterior root, the lower supply the index finger and the upper the thumb,—an interesting fact for finer spinal localization. There are many abdominal disturbances that patients suffer from which are but little understood. In my last 100

laminectomes for spinal disease I have performed six operations on patients who had been treated for long periods for abdominal symptoms. In every case of indefinite abdominal pain and tenderness it is advisable to make certain that we are not dealing with a cutaneous hypersensitiveness, which so often simulates real abdominal tenderness. Before doing a root section for gastric crises I believe there should always be given a preliminary intraspinal injection of stovain. By this means will be gained a fair idea of the prospect of success from division of posterior roots. The operation of Spiller and Martin for severe pain of peripheral or of spinal origin is based upon a sound anatomical and physiological foundation and the future for the operation is a very bright one. The question of whether the spinal cord is sensitive to pain, or like the brain, insensitive, is a subject to which I have been giving some of my time and attention. I have observed patients upon whom lumbar puncture was done, others upon whom spinal operation was done under local anesthesia. Finally, I have attempted to learn something on this subject in the course of some experiments upon animals. Other attractive subjects for study are the pathological mechanics of spinal compression, and a more intensive study and comparison of the sensory and motor disturbances which occur on each side of the body when the spinal cord is pressed upon by a new growth or as a result of an inflammatory or traumatic lesion.

Dr. Charles W. Burr: In a patient seen some years ago the only symptom present was diffuse pain in the right arm. Later there was slight wasting in the muscles around the thumb. The pain was later replaced by painful anesthesia accompanied by marked wasting and gradually increasing palsy in the whole arm. After some time death ensued and at post mortem there was found in the cervical region a long flat growth that had entered the nerve roots, first the posterior, causing only pain and then the anterior, causing pain and wasting. Had we but known the cause of the trouble, operation would have saved her a great amount of pain and probably her life. The more we learn of the distribution of pain in reference to the nerve roots affected, the more we shall be able to do in all of these cases.

Dr. Charles H. Frazier: My experience in operating for the relief of pain consequent upon spinal lesions has been confined to cases of tumors operable and inoperable of tabetic crises, and of persistent neuralgia following injuries to the brachial plexus. I think it is too commonly supposed that pain is a constant and conspicuous symptom of spinal tumor referred to the peripheral distribution of the segment involved. A number of cases of spinal tumors have been observed in which throughout the course of the lesion there was absolutely no pain. The widely varying results of rhizotomy would seem to throw some doubt upon the present conception of the pathways of afferent impulses and to suggest the possibility of the ventral roots having some part in the carrying of afferent impulses. Such hypothesis has been already advanced by Kidd. Whenever possible, a therapeutic test should be applied before operation in order to determine whether interruption of the sensory impulses does not relieve pain. Spiller's suggestion of resection of the anterolateral column of the cord is a most valuable one and appeals to me particularly in cases of uncontrollable pain of the lower extremities and more especially because the operation does not necessitate the removal of as many laminae of the spine as would be necessary to cut the required number of lumbar and sacral roots. In the limited number of root resections for pain in my own clinic there have been no fatalties, but in a larger series, performed by a number of surgeons, the mortality rate has been estimated at 10%. This I believe is too high and that the risks of the operation should be materially reduced. The low rate of mortality in my own experience with laminectomy I attribute chiefly to intratracheal anesthesia and to the use of the stovain block.

Dr. Elsberg: I am not very enthusiastic about cutting posterior spinal roots in the treatment of the crises of tabes. Professor Forster states that the only way to get a fairly good result is by an enormous laminectomy, cutting from the fourth or fifth dorsal down to the twelfth, and that even then the result is not certain. I have seen temporary benefit from the injection of stovain into the spinal canal. Laminectomy is an operation in which the mortality should be very small and one which a surgeon after a little experience should be able to do easily. In 98 successive cases we have had no mortality.

THE PATHOLOGY OF TABETIC OCULAR PALSIES.

Dr. William G. Spiller: The causal relation of syphilis to tabes and paresis is now fully accepted and gradually the view has gained headway that tabes and paresis are really syphilitic and not parasyphilitic diseases. This opinion has been greatly advanced by the discovery of Noguchi and Moore of the spirocheta pallida in tabes and paresis. The present status of the syphilis tabes paresis question has been fully discussed by Nonne. It has taken many years to establish what is now known in regard to this matter, and it has become evident that some of the sharp distinctions between tabes and paresis, on the one hand, and cerebrospinal syphilis on the other, need modification. This does not mean that we must drop the designations of tabes, paresis and cerebrospinal syphilis. The ocular palsies of tabes have been regarded by some investigators as nuclear in origin and the syphilitic ocular palsies as of nerve origin. This view may be disputed. I have studied by microscopical serial sections a typical case of tabes with complete internal and external ophthalmoplegia. The ocular nerves and their nuclei were much degenerated, there was considerable round cell infiltration of the pia, but one of the abducent nerves which was less degenerated than the other showed also less round cell infiltration within the nerve. Round cell infiltration is indicative of the intensity of the syphilitic process. This case would throw doubt on the view that tabetic ocular palsies are nuclear.

DISCUSSION.

Dr. Charles K. Mills: Dr. Spiller's paper is another contribution to our exact knowledge of the well known phenomena of tabes and another contribution to assist us in bringing together so-called parasyphilis and syphilis, or rather to break down the artificial partition which has been reared for so many years between these so-called different specific diseases. We can understand some of the well known early phenomena of tabes better by recognizing the position which Dr. Spiller takes regarding these ocular palsies. As an example, it is not

at all uncommon for the diplopia often present in early tabes to rather quickly disappear. I take it that this would not occur were the palsies due to nuclear degeneration.

DR. DANIEL J. MCCARTHY: Certainly syphilis of the brain and of the spinal cord reacts entirely different to treatment with mercury or salvarsan from tabes and paresis. The accumulation of statistics from salvarsan and other treatment leaves little doubt that, while there is a certain amount of symptomatic improvement, there is little evidence of clear cut cures in tabes, and none in well-developed paresis. There is a group of diseases of syphilitic origin which reacts fairly well to treatment. I would ask Dr. Spiller whether in his opinion tabes still exists, or whether all cases of tabes should be grouped together as spinal syphilis. My feeling is that we have distinct cerebral syphilis which reacts to treatment. Apart from this, paresis on the one hand and tabes do not react, and when once developed are practically incurable.

DR. SPILLER, closing: We recognize tabes and paresis, but we must regard them as truly syphilitic diseases. Tabes is caused by the degeneration of the posterior roots from the syphilitic poison. There are cases in which a positive diagnosis between spinal syphilis and tabes cannot be made. There are also cases in which the diagnosis between cerebral syphilis and paresis cannot be made, and these cases show how close the connection between cerebrospinal syphilis and the so-called parasyphilitic diseases may be. From my study of the effects of syphilis on the nervous system and from a reading of the literature I have formed the opinion expressed in my paper.

NEW ENGLAND PEDIATRIC SOCIETY.

MEETING OF DECEMBER 4, 1914, HELD AT THE BOSTON MEDICAL LIBRARY.

The President, DR. C. A. PRATT, of Fall River, in the chair.

The following officers were elected for the ensuing year:

President, DR. E. M. BUCKINGHAM, Boston, Mass.

Vice-President, DR. E. F. CURRY, Fall River, Mass.

Secretary and Treasurer, DR. RICHARD M. SMITH, Boston, Mass.

Member of council for three years, DR. FRITZ B. TALBOT, Boston, Mass.

The following papers were read:

CHILDREN WITH POSITIVE SKIN TUBERCULIN REACTION.*

By ORVILLE F. ROGERS, JR., M. D., Boston.

TRAUMATIC RUPTURE OF INTESTINE.†

By LINCOLN DAVIS, M. D., Boston.

A CASE OF ACETONURIA.‡

By WILLARD S. PARKER, M.D., Boston.

THE SIGNIFICANCE OF THE X-RAY GASTO-INTESTINAL FINDINGS IN CASE OF CONGENITAL STENOSIS OF THE PYLORUS, FOLLOWING POSTERIOR GASTROENTEROSTOMY.§

By CHARLES L. SCUDDER, M.D., Boston.

SOME STUDIES IN FAT INDIGESTION.¶

By CHARLES HUNTER DUNN, M.D., Boston.

DISCUSSION.

DR. C. W. TOWNSEND, Dr. Davis's paper: I would like to ask Dr. Davis what percentage of mineral matter there is in ordinary tap water. I supposed that pure water was an irritant to the mucous membrane, and the fact that tap water works as well as salt solution would rather indicate that there was some mineral matter in it.

DR. F. B. TALBOT, Dr. Parker's paper: This type of case is extremely interesting, because we know so little about the real cause of vomiting associated with acetonuria. Curiously enough, a number of cases that I have seen with acetonuria and vomiting have all had acetone in the urine as soon as I was able to get a specimen. That does not mean that the acetone preceded the vomiting in all these cases, but there are many cases such as one I have at present in the ward at the Massachusetts General Hospital which has a large amount of acetone in the urine and who has not yet vomited. Associated with the acetonuria and vomiting there is evidence of an intolerance to fat, and my clinical experience has been that the majority of these cases have done better and have had fewer attacks when the fat has been entirely cut out of the diet.

DR. C. A. PRATT: I have seen two out of six children with this condition die, which is rather a large death-rate, I think.

DR. W. S. PARKER in closing: I had a report very recently on this case which was operated on. General microptosis and a much dilated cecum were found. The cecum was unfolded and the transverse colon suspended. No attacks were recorded for ten months, when they recurred with very moderate severity and nothing like the former frequency; they have diminished from that time on, and the last letter from the parents states that they regard the operation as a complete success as far as cure is concerned. This is rather unusual, as the constipation is still very extreme.

DR. F. B. TALBOT, Dr. Scudder's paper: I agree in general with everything Dr. Scudder has said, but I would like to know how he answers the question which is raised that in the majority of these babies they do not begin to vomit until they are about ten days old. I would like to know how he explains that fact and why, if there is a congenital tumor at birth, we do not have vomiting from birth?

DR. C. G. MIXTER: Last year, I reported before this Society, five cases which we had had in our clinic at the Children's Hospital, which were followed through their ultimate course after operation with x-rays, and which substantiate Dr. Scudder's pictures entirely. Furthermore, we had one case in which, several months after gastroenterostomy, a stomach-tube was passed—it went into the duodenum, then came to a halt, was deflected upward and around, and finally went out through the

* See JOURNAL, page 161.
† See JOURNAL, page 163.
‡ See JOURNAL, page 164.
§ See JOURNAL, page 166.
¶ See JOURNAL, page 167.

stoma, after making a complete circle, showing that the pylorus was still sufficiently obstructed to resist the pressure of a stomach-tube above it. I have seen other cases also since that time, the time of course being short, but in all the obstruction has remained.

Dr. Scudder: There is no longer any doubt that the tumor in these cases is congenital. There has been a case reported—one that we all have been on the lookout for—a still-born baby, a fetus, in which the congenital tumor was present. It is the first instance reported, and it establishes the fact that the tumor is congenital.

In answer to Dr. Talbot's direct question, "Why do not these babies vomit from birth?"—the average time of vomiting is from two to three weeks in a large series of cases. Some of them do vomit at the end of the first week. Some spit up a little just after birth. One reason that has been attributed for their beginning to vomit at the end of a week is that the mother's milk begins to be secreted copiously at this time. The ingestion of this larger quantity results in spitting up and vomiting. I believe that the tumor exists at birth and that the lumen of the pylorus is obstructed to a variable extent, the obstruction differing in each case. In some cases it is nearly complete, in others it is much less. Therefore, remembering that each individual needs a certain lumen to his pylorus to get food through wthout vomiting, it is fair to conclude that if the pylorus is sufficiently patent, there will be no vomiting; if it is not sufficiently patent, then vomiting begins.

Instead of supposing that a pyloric spasm exists in these tumor cases, it seems to me that it is more reasonable to suppose that the edema of the mucous membrane and the swelling of the pyloric ring are competent to occasion a rather sudden narrowing, and the onset, therefore, of vomiting. It is true that all parts of the child grow rapidly during these first few weeks, and this tumor will grow, thus obstructing more and more. The answer to the question why vomiting occurs at different periods is that there is a mechanical and not a physiological cause at work. I think it unnecessary to introduce the physiological functional element seen in the contracting pyloric sphincter. The purely physical explanation is entirely adequate. The edema of the mucous membrane, the increased swelling of the longitudinal fold that normally exists within the pylorus, and the natural growth of the tumor itself, all adequately contribute to the obstruction.

Dr. K. G. Percy, Dr. Dunn's paper: I would like to ask Dr. Dunn if in this series he has seen two types:—one of straight fat indigestion, and the other of fat indigestion plus a carbohydrate indigestion. Are these latter not primarily carbohydrate indigestion? You say, that in your series, these cases with sugar indigestion as a complication have not shown a gain on any special type of milk formula even lactic acid milk. We have been following the cases of diarrhea at the Children's Hospital with the gas bacillus test and Dr. Sylvester has been following the fat indigestion cases with the same test. Many of these cases, having secondary inability to take care of sugar, were positive for gas bacillus and did well on butter-milk, both in regard to weight gaining and later, acquiring their ability to take care of fat. Have you found this same phenomena, which we believe typical of a special type of, so-called, fat indigestion?

Dr. H. A. Gale: Was maltose tried in the beginning of treatment of these cases and did it prevent blow-ups?

Dr. H. A. Gale, Dr. Dunn's paper: I would like to ask Dr. Dunn a question, and that is whether or not there is any record of the proportion of those cases in which cane sugar seems to do the damage. My impression is that most of the cases of straight fat indigestion have been either on starch mixtures or cane sugar mixtures. I would also like to ask if there was any attempt made to replace the bovine fat by the other fats. That has been done in some places, althouh no definite results have been reported as yet.

Dr. F. B. Talbot, Dr. Dunn's paper: I notice that Dr. Dunn said that in one of his cases he had found tuberculosis. In infancy the tubercle bacillus usually gains entrance through the glands and in a large number of instances through the mesenteric glands. In a series of cases[1] which I studied two or three years ago I showed that when all the mesenteric glands were tubercular and functionally destroyed, that fat would be digested but not absorbed and as a result fat was found in the stools. Such cases, of course, are not cases of fat indigestion *per se*, they are cases of tuberculosis. Furthermore, it is conceivable that a similar condition can be present in hereditary syphilis, although it has not been proven. Such cases are very difficult to feed and their stools are likely to contain fat; they are sometimes classified as cases of fat indigestion, but they get well if put on proper antisyphilitic treatment. In regard to soap stools, I have found it very difficult to tell whether there is more soap or less soap in a stool. It is very easy to say whether there is soap or not, but when a stool becomes a soap stool, my experience has been that practically all the stool is soap and there is no "more" or "less." To my mind the most important factor in these very difficult cases of infant feeding is the balance of the food, that is the relation of the fat to the carbohydrate, and the protein, and of the sugar to the fat, and so on. In a great many cases in which the stools have been loose and have contained free fat, in other words, fatty acids, I have been able to change the stool into a soap stool very easily, merely by changing the balance of the food, that is, a food with a high percentage of protein and a relatively low percentage of fat and sugar. Last year Dr. Hill and I[2] reported the metabolism of a baby in which the sugar in the food was increased about 3% at a time. We measured the fat, the nitrogen, and the carbohydrate metabolism, as well as the sugar. When the food got beyond the limits of tolerance for sugar the baby had symptoms of indigestion which were due to the sugar. The stools contained a great deal of fat, which they did not contain before. That was not a case of fat indigestion, but a case of sugar indigestion. The digestion of sugar and the fat is so intimately connected, that it is almost impossible to say what element was the primary cause of the indigestion, the fat or the sugar, without previous knowledge of the course of the disease, and I wonder how Dr. Dunn was able to tell that these cases were all cases of fat indigestion. A word as to my feeling as to the action of protein. I look upon buttermilk, Eiweissmilch and precipitated casein as foods in which the

[1] Tuberculosis of the Mesenteric Glands in Infants and Young Children: Its Effect on Absorption. Am. Jour. Diseases of Children, 1912, iv, 49.

[2] The Influence of Lactose on the Metabolism of an Infant, Am. Jour. Diseases of Children, 1914, viii, 218.

action comes more from the form of protein than because it is Eisweissmilch, buttermilk or what not. In other words, it is a protein that cannot be coagulated again. My experience has been that boiling the milk gives practically the same results as buttermilk, precipitated casein or albumen milk. I was very much interested in Dr. Dunn's paper, and I hope there will be more papers like it.

DR. C. L. SCUDDER, Dr. Dunn's paper: How many cases were observed during this period in this study?

DR. C. H. DUNN, in closing: Thirty-five cases comprise the statistical table which I am at work on.

In answer to Dr. Percy, I will say that we did see carbohydrate, or signs of carbohydrate indigestion in the course of some of these cases, but whenever it occurred we could relieve it very easily, but the fat indigestion we could not relieve so easily. Also there is a large series of cases that came into the hospital which were diagnosed as carbohydrate indigestion only. They gave the symptoms of acid irritating stools, gas, green movements and vomiting, but they were very easily relieved and soon discharged. In those cases when we gave moderate amounts of carbohydrates we did not see signs of carbohydrate indigestion after they entered the hospital. The only time we saw it was when we attempted to experiment by increasing the amount of carbohydrates.

DR. GALE'S question: A certain number of cases were on maltose preceding a "blow-up," with an increasing amount of fat in their stools; fully as many cases in the series showed fat "blow-ups" on maltose as on lactose. Possibly we had more on maltose. The maltose seemed not so much of use in preventing the "blow-ups," but it allowed us to obtain a gain in weight with a small amount of fat. It nourished the baby better, but did not increase the fat tolerance.

DR. PORTER'S question: I am by no means convinced myself from our evidence that the cow's milk salts do not play an important rôle in these cases. In fact, we entered the investigation rather in the hope of obtaining evidence to that effect. The method of using precipitated casein and alternating with whole milk protein is a rather crude one, anyway. What we would like to do if we had enough breast-milk would be to repeat the experiment of using human milk fat with cows' milk, whey and vice versa. It seems to me it would give very definite evidence as to the rôle of the salts. All we were able to conclude was that we did not get the advantage from feeding the precipitated casein and diminishing the salts that we expected to get when we began the investigation. There were certainly cases in the series which did better on precipitated casein, but there were others which did not.

Dr. Talbot has spoken about estimating the amount of fat as soaps in the stools. I do not believe that our method is an accurate one at all, but we are endeavoring to adopt a standardized method which we will transmit from house officer to house officer. The method is simply to take a definitely measured portion of the stool and mix it with Sudan III and acetic acid, boiling, and then estimating the results by the concentration of the globules. This is a very crude method, and although we have what we call a sliding scale, yet the evidence of the actual amount of fat as shown in this way does not amount to very much—it is either a soap stool or it is not.

The importance of maintaining a balance between the fat, carbohydrates and protein I quite agree with. You have got to keep the balance more or less constant or some form of indigestion will surely follow. Dr. Talbot asked whether they were all cases of fat indigestion or whether some of them might not have been carbohydrate indigestion. I might say that we did not classify them as to what was the possible primary condition. We classified as carbohydrate indigestion those which did not show fat indigestion, cases showing symptoms of carbohydrate indigestion which were relieved when the carbohydrates were cut down or changed. The other cases which showed fat in the stools we classified as fat indigestion without reserve. The only evidence which I have on that point was obtained from looking over all the histories, which we went into as carefully as possible. This frequently suggested carbohydrate overfeeding, and it was on that basis that I suggested that the carbohydrate fermentation seemed to be a very possible primary cause, and I think that the relationship between fat and carbohydrate indigestion is very close, just as Dr. Talbot has stated.

Book Reviews.

Therapeutics of Dry Hot Air. By CLARENCE EDWARD SKINNER, M.D., LL.D. Third edition. Thoroughly revised to date. Hammond, Indiana: Frank S. Betz Company. 1914.

The first edition of this book was reviewed in the issue of the JOURNAL for Jan. 29, 1903 (Vol. cxlviii, p. 128). The second edition, published in 1905, contained a number of additional case reports, several new illustrations, and a number of technical details. This third edition has been largely rewritten so as to embody and conform with recent advances in knowledge, and contains a new chapter on the incandescent electric light as a local therapeutic agent. It is illustrated with 40 text-cuts. It has the merits and defects of its original, and, in the words of our previous review, "cannot be called a judicial statement of the uses and limitations of this mode of treatment."

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by SIR WILLIAM OSLER, Bart., M.D., F.R.S., and THOMAS MCCRAE, M.D. Volume III. Diseases of the Digestive System—Diseases of the Urinary System. Philadelphia and New York: Lea and Febiger. 1914.

The third volume of this standard work now appears in its second edition. This volume takes

up diseases of the digestive system and of the urinary system. The plan of the first edition has been followed. There are authoritative chapters on the various aspects of the diseases of the two systems covered in this volume. These chapters are written by men who have done notable work in the fields that they discuss. It is sufficient to say that this volume, like its predecessors, leaves very little to be desired in the complete and up-to-date discussion of the subjects to which it is devoted.

Diseases of the Rectum and Anus. A Practical Handbook. By P. LOCKHART-MUMMERY, F.R.C.S., Eng., Senior Surgeon to St. Mark's Hospital for Cancer, Fistula, and Other Diseases of the Rectum; and Surgeon to the Queen's Hospital for Children; Late Hon. Surgeon, King Edward VII Hospital for Officers. New York: William Wood and Company. 1914.

This small volume of 350 pages is written by an Englishman and published in New York. Mummery says: "The material for the book has been gathered from my own experience in private practice and at St. Mark's Hospital. This hospital affords unrivalled opportunities for studying diseases of the rectum, for only diseases of the bowel are treated there, and the attendances in the out-patient department are over 7500 in the course of a year, while cases admitted to the wards average about 650. It is much to be regretted that while numbers of doctors from America, the Colonies, and abroad generally, attend the practice of this hospital, the number of English doctors who avail themselves of the clinical material to be found there is deplorably small." The author goes on to state that nearly 50% of the population, presumably of England, have some rectal trouble sometime in their life. He tells us that the book is a practical guide to the treatment of rectal diseases, and that most of the drawings are his own.

The book is much smaller and more compact than either of the volumes on the same subject recently reviewed in this JOURNAL. It has that curious omission of a chapter on Anatomy, which certainly detracts from the value of the book. The treatment of the various conditions described, (and everything which probably comes within the domain of proctology, is described), is brief, definite, and positive. Simple procedures are invariably given preference. The author emphasizes repeatedly the importance of post-operative treatment, and since he is in charge of a special hospital, to which only rectal cases are admitted, he has excellent opportunity of judging both the satisfactory effects of efficient post-operative treatment and the unfortunate results which follow too frequently the average treatment in the hands of the average practitioner.

We notice with surprise that he does not recommend dilatation of the sphincter before operation for internal hemorrhoids. The author's own operation of perineal excision of the rectum is described in much detail, although he frankly says, "It is now, to a large extent, replaced by abdominal-perineal excision." He has had some excellent results by this method; several cases which have already passed the five-year limit. He comments on the similarity between his operation and that of Quénu, and of Hartmann, of Paris; but his own operation was worked out without knowledge of either of the others. In colostomy, he recommends the opening through fibers of the rectus muscle.

There is no bibliography, and comparatively few references to other authors, none to American authors, with the exception of Tuttle. On the whole, however, the book is an excellent small text-book. Its printing, paper, and illustrations are very satisfactory.

The Backward Baby. A Treatise on Idiocy and the Allied Mental Deficiencies in Infancy and Early Childhood. By HERMAN B. SHEFFIELD, M.D., New York. Awarded the Alvarenga Prize of the College of Physicians of Philadelphia, July 14, 1914. pp. 184, with 22 original illustrations in the text. New York: Rebman Company. 1914.

The author states in his preface that "the aim of this prize essay is to present to the profession a practical survey of the etiology, pathology, diagnosis and treatment of the diverse mental deficiencies as they occur in children under five years of age. The existing excellent monographs and text-books on the subject are," as he truly states, "almost exclusively devoted to the study of feeble-mindedness in children of school age and adults." There was, therefore, an opportunity to write an epoch-making book. Unfortunately, the author has not taken advantage of this opportunity, but has instead written a superficial and incomplete treatise on the subject. It is interesting and instructive, but falls far short of what it might have been. We hope that he will take advantage of the opportunity and, using this book as a basis, write a new one.

A Mind Remedy. By JOHN G. RYERSON, M.D. Boonton, N. J. 1914.

The writer's idea as stated by himself is that he proposes to show that scores of the most common diseases have such a uniformity of symptoms as to be justly classed as one disease, and that he has found what is practically a specific for this disease, which is lactose. The large number of cases, which include asthma, eczema, locomotor ataxia, organic heart disease, interstitial nephritis, difficult labor, puerperal convulsions, and many others, are so imperfectly re-

ported that no conclusions can be drawn; and the looseness of thought which allows the writer to include among his cases some where he claims the figure, or voice, was improved, the apparent age lessened, the hands and feet made smaller by his treatment, does not inspire confidence. This book may be neglected except as a curiosity of medical literature.

A Treatise on Diseases of the Rectum and Anus. Edited by A. B. COOKE, A.M., M.D., Formerly Lecturer on Diseases of the Rectum and Professor of Anatomy in the Medical Department, Nashville, etc. Assisted by WILLIAM M. BEACH, A.M., M.D., Pittsburgh, Penn.; GEORGE B. EVANS, A.M., M.D., Dayton, Ohio; J. COLES BRICK, M.D., Philadelphia, Penn.; ALOIS B. GRAHAM, A.M., M.D., Indianapolis, Ind.; GRANVILLE S. HANES, M.D., Louisville, Ky.; LOUIS J. KROUSE, M.D., Cincinnati, Ohio; COLLIER F. MARTIN, M.D., Philadelphia, Penn.; FRANK C. YEOMANS, A.B., M.D., New York City; A. J. ZOBEL, M.D., San Francisco, Cal. With 215 illustrations in the text and 21 full-page plates, 7 in colors. Philadelphia: F. A. Davis Company. London: Stanley Phillips. 1914.

This admirable and rather small volume of six hundred pages treats its subject in an unusual manner. In his foreword, the author says that at least 20 years ago he decided to write a practical treatise on Diseases of the Rectum, based on his own personal experience. "But as circumstances directed my interest and practice into the broader field of general surgery, enthusiasm waned and the work was laid aside when only partially completed." Recently he has revised the previously written chapters and has edited the remainder. The book is, therefore, Dr. Cooke's own text-book in its first half and a series of monographs from the pens of nine specialists in the latter half. Moreover, the rectal surgeon of twenty years ago has now become a general surgeon, and as a result we find a wide general experience concentrated upon a specialty. This is a very desirable and unusual occurrence. The book commences with a very satisfactory chapter on anatomy and physiology. Dr. Cooke's own contributions include most of the commoner conditions of the anus and rectum. The other 14 monographs treat of stricture, benign and malignant tumors, neuroses, trauma, local anesthesia, major operations, and interesting chapters on recto-colonic alimentation and relation of rectal diseases to the general health. An excellent feature of much of the work is a brief outline at the beginning of each chapter and history of the subject which is about to be considered. The illustrations are numerous and unusually good; in spite of this it has been found possible to eliminate the extreme gloss of the paper so often used for the purpose of illustrations, for which the editor deserves our thanks. The binding, printing, index, etc., are entirely satisfactory. The book is to be cordially recommended; it is really a very admirable hand-book,—long enough, but without a single unnecessary page.

The Tonsils,—Faucial, Lingual, and Pharyngeal. With Some Account of the Posterior and Lateral Pharyngeal Nodules. By HARRY A. BARNES, M.D., Instructor in Laryngology, Harvard Medical School; Surgeon in the department for diseases of the nose and throat; Boston Dispensary; Assistant Laryngologist, Massachusetts General Hospital; Member of the New England Laryngological and Otological Society; Members of the American Laryngological, Rhinological and Otological Society. Illustrated. St. Louis: C. V. Mosby Company. 1914.

This is a book of 160 pages on the tonsils and the other parts of the tonsillar ring, including their development, anatomy, physiology, pathology and surgery. The author states in the preface that his object is "to put into concise form the facts concerning the lymphoid tissues of the throat," and he has succeeded admirably in doing so. He has combined into a consecutive and attractive manual the results of his work in the pathological laboratory, his experience in a large clinical service and the review of several of the more important publications. The book presents the subject better and more thoroughly than do the corresponding chapters in any of our text-books. It is not encumbered with varying points of view, although the student who wishes to go deeper will find numerous references to other authors. Much has been written in recent years about the tonsils, but this is so scattered that it is not easily available. In collecting this material the author has been guided by his own judgment, which represents the opinion and practice of American authorities of the present day. The illustrations are original and to the point. A better understanding of the tonsillar ring is desirable not only for the laryngologist, but also for the general practitioner and pediatrist, and to all of these this book should be welcome.

THE BOSTON
Medical and Surgical Journal

An independently owned Journal of Medicine and Surgery, published weekly, under the direction of the Editors and an Advisory Committee, by the BOSTON MEDICAL AND SURGICAL JOURNAL SOCIETY, INC.

THURSDAY, FEBRUARY 4, 1915.

EDITORS.

ROBERT M. GREEN, M.D., *Editor-in-Chief.*
WALTER L. BURRAGE, M.D. } *For the Massachusetts Medical Society.*
FREDERICK T. LORD, M.D. }

COMMITTEE OF CONSULTING EDITORS.

WALTER B. CANNON, M.D. — ALLAN J. MCLAUGHLIN, M.D.
HARVEY CUSHING, M.D. — ROBERT B. OSGOOD, M.D.
DAVID L. EDSALL, M.D. — MILTON J. ROSENAU, M.D.
REID HUNT, M.D. — EDWARD C. STREETER, M.D.
ROGER I. LEE, M.D. — E. W. TAYLOR, M.D.

ADVISORY COMMITTEE.

EDWARD C. STREETER, M.D., Boston, *Chairman.*
WALTER P. BOWERS, M.D., Clinton.
HOMER GAGE, M.D., Worcester.
JOEL E. GOLDTHWAIT, M.D., Boston.
LYMAN A. JONES, M.D., North Adams.
HUGH WILLIAMS, M.D., Boston.
ALFRED WORCESTER, M.D., Waltham.
ROBERT B. OSGOOD, M.D., Boston, *Secretary.*

ERNEST GREGORY, *Manager.* W. M. LEONARD, *Consulting Manager.*

SUBSCRIPTION TERMS: *$5.00 per year, in advance, postage paid, for the United States. $6.56 per year for all foreign countries belonging to the Postal Union.*

The editor will be in the editorial office daily, except Wednesday and Sunday, from twelve to one-thirty p. m.

Papers for publication and all other communications for the Editorial Department should be addressed to the Editor, 126 Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish the first one hundred reprints for half the cost price.

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

ERNEST GREGORY, *Manager,*
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

FEDERAL OR LOCAL ADMINISTRATION OF MARITIME QUARANTINE.

IN several recent issues of the JOURNAL we have commented editorially on the question of the transfer of the Boston Quarantine Station from municipal to federal control. On January 1, a hearing on this subject was held before the City Council, and at the request of that body a committee of six was appointed by the Boston Chamber of Commerce to study the problem and report at a future meeting.

The special committee on the quarantine service is composed of former Lieutenant-Governor Robert Luce, chairman; Magnus W. Alexander of the General Electric Company, who served last year on the State Commission on Pensions; George W. Franklin of the Walker-Gordon laboratory; Irving B. Howe of A. H. Howe and Sons, shoe dealers; Demarest Lloyd of the *Boston Journal;* and Hugh D. McLellan, lawyer.

On Thursday of last week, January 28, this committee held a public hearing which all interested persons were invited to attend for expression of their views or to submit supplementary information. The committee had before it the stenographic records of the hearing of the City Council on January 1 and other data hitherto presented. Although the subject of maritime quarantine has previously been considered in the JOURNAL, the question is of such importance that its further discussion at the present time seems desirable.

Maritime quarantine is about as old a subject as history. In general but little thought is given to it outside of those directly concerned, except when some epidemic occurs, or as recently, when the City of Boston discussed the advisability of turning the local quarantine station over to the Public Health Service. The expense of maintaining a model quarantine station is considerable and largely has to be borne by the taxpayers of either city, state or nation.

This country is a union of states, and for the common welfare a central form of representative government exists, with certain fixed powers. Each unit or state also has recognized rights. One of the rights of the national government is to regulate or restrict commerce with foreign countries, and in that the state must subordinate itself to the nation.

In 1893 Congress passed certain quarantine laws and designated the manner in which they should be carried out. It was declared unlawful for any vessel from a foreign port to enter any port in the United States except in accordance with the provisions of this act and with such rules and regulations of state and municipal health authorities consistent with this act. A penalty is provided for violation of same.

It is generally accepted that among intelligent people, the least governed the better. International or interstate quarantine is a matter bound to interest the country as a whole, for any port of entry may distribute people to every state in the union or to adjacent countries with whom we have treaty obligations, including certain sanitary protection.

Hence we find that the United States passes a national law and at the same time makes provision for any state or municipality to work its solution in its own way as long as the letter of the law is carried out. Further, there is nothing to interfere with the state adding such rules as it sees fit for local safety. For example, every quarantine station would be required to detain a case of bubonic plague and clean up the ship, but would not be required to do the same

with a case of measles or scarlet fever. The latter type of cases would be provided for under local rules.

Under the same Act of Congress an organized branch of the federal service was authorized to carry out these acts, namely, the Marine Hospital Service, now the Public Health Service, and it was provided for the Surgeon-General of that service under direction of the Secretary of the Treasury, to coöperate and aid state and municipal health boards in the enforcement of rules and regulations laid down by the Secretary.

In looking over the regulations issued in 1910 may be found sections explaining the above in detail. Pages 1 to 14 relating to regulation of foreign commerce by the government, show how local health boards must be familiar with federal law and enforce the same; how, in case of failure on the part of local health authorities to enforce the law, the United States can insist on a federal officer signing health certificates before a ship can enter a custom house, which means permit to discharge passengers, crew, and cargo.

These regulations are being constantly changed to facilitate commerce as new discoveries are being proven as to the transmission of disease. Also the government is being constantly informed through medical officers stationed at our consulates in foreign countries or by the consuls themselves of the sanitary conditions and existence of epidemic disease throughout the world. This information is distributed by the Public Health Service to all concerned.

The press inference is that it would be detrimental to local business to change from local to federal control for the following reasons: The port would be closed from sunset to sunrise. Ships from Canadian ports would be subject to delays that they now escape by being allowed to pass without stopping, regardless of time. Government officials with attendant red tape and, someone added, gold lace, would tend to delay clearance. In case of doubt decisions could be more quickly given than to have to wait an opinion from Washington.

On the other hand, it must be remembered that local officers have to conform to federal law and said law must have provided for these privileges or local officials might be accused of violations. As a matter of fact, the local men have always been efficient in this matter and the regulations provide under certain circumstances for ships to be passed after dark and for permits for ships from adjacent territory, hence there can be no suspicion of special privilege. The fact that a large proportion of arriving passengers are destined to points outside the state brings up the question whether or not the local community or the nation should bear the expense.

The commercial world is moving steadily forward and today sailing ships are almost a thing of the past, steamers having taken their place. This is important as changes in structure and speed of ships affect quarantine problems. Sailing vessels were usually long enough at sea to cover the incubation period of disease and were easy to disinfect, their greatest danger being the carrier of disease in apparent good health. Steamships cover the route more quickly, are more difficult to disinfect thoroughly owing to their more complicated structure and may easily arrive with passengers or crew in the incubation stage. The danger of port infection always has to be considered as it depends on a knowledge of sanitary waterfront conditions of the port cleared as well as entered. For example, a plague infected rat escaping a ship in Boston might be a far more serious matter than the same event happening in some of the European ports.

Shipping firms are naturally interested in seeing that they have as little red tape as possible in clearing or entering their ships. Chambers of commerce are anxious that their cities may offer every facility for the landing of passengers and cargo in order that local commerce shall increase. They may feel that it is easier to do business with officials they know and who in turn are familiar with local conditions and problems. They want prompt decisions and officials interested in local welfare.

There is no known reason why the federal government cannot meet the local authorities and arrange to keep a certain number of local men in permanent employ to see that local interests are best served in compliance with federal regulations. The objection to the chief being in Washington should not be a stumbling block, for there is nothing in the law or regulations that prohibits officers in charge of quarantine stations having or using such authority as would cover all ordinary problems or emergencies. The objection made to gold lace seems largely due to military semblance and the natural opposition to military government incompatible with a republic. The Public Health Service is not a military service but a civil organi-

zation in which part of the officers are commissioned by the President and part appointed by the Secretary of the Treasury under the rules and regulations of the United States Civil Service Commission. It may better be considered a sanitary police organization, a civil organization charged with the administration of laws relating to public health but without military rank or power. It is the nearest thing we have to a National Board of Health. There is no reason why it should not be conducted on broad business lines and appoint such officers as are best qualified for local needs. One of the best things that could happen would be for Congress to recognize it as a beginning of a National Department of Health and place or reorganize it on a liberal civil service basis. If this service is feared for any good reason by the commercial interests it is time it was reorganized on such a basis that it would be welcomed.

In an organized service with the functions of the Public Health Service a distinctive uniform is necessary for certain work, to distinguish grades, for discipline, and identification. For this purpose a simple uniform ought not to be difficult to devise. The uniform of the New York State Quarantine Service which is of a decided distinctive type has never yet been the cause of delay or complaint of delay in the work.

To sum up, there is nothing under the law which local officials can grant but what the federal officials can grant. It is a question whether the community prefers to pay the cost of maintaining a station for emergency, whether it would be better for the commercial and shipping interests to have local officials or federal officials administer the federal law, and whether the large interests of public health are not to be regarded above all local and personal considerations.

At a meeting of the City Council on Jan. 30 the proposed ordinance, effecting the quarantine transfer, was rejected without prejudice, in order that the matter may be brought up as new business before the new Council next week.

A CAREER OF PROFESSIONAL AND PUBLIC SERVICE.

ON the first of February, Dr. John Hildreth McCollom retired after a service to the City of Boston in various medical capacities for forty-two years, the past twenty years of which were spent at the Boston City Hospital. During these years he has made a notable record of professional and public service, and his retirement from more active participation in the administration of the hospital is an important loss to that institution.

After serving throughout the Civil War as hospital steward in the Thirtieth Regiment of Massachusetts Volunteer Infantry, Dr. McCollom first established his connection with the Boston City Hospital as house officer in 1868. In 1872 he became assistant to the city physician of Boston and served in that capacity until 1881 when he became himself city physician. In this capacity he served the public faithfully and efficiently until 1895, when he was appointed resident physician of the newly opened South Department. Here he served until 1909, acting since 1900 as physician for infectious diseases. It was during this period that he made his most valuable contributions to medical science.

Dr. McCollom's contributions to medical literature began early in his career. His first articles on "The Use of the Obstetric Forceps" and "The Smallpox Epidemic in Boston," were published in this JOURNAL in 1882 (Vol. 107, page 266 and 344 respectively). Following these the bibliography of his publications forms an important list of over thirty-five titles, covering a wide range of medical and surgical subjects. Most noteworthy of all these are his contributions on diphtheria, representing the results of his epoch-making work at the South Department. At the time when Dr. McCollom took charge of this department the mortality rate from diphtheria was 18 per 10,000 of population and nearly 50% of those infected. This was just before the introduction of intubation and antitoxin. It was the great achievement of Dr. McCollom by introducing these measures, not without opposition, and by the persistent efficiency of his own watchful professional care, to reduce the incidence and mortality of diphtheria almost immediately to their present low rate. Our feeling of security against this frightful scourge of humanity is now so familiar and easily assumed that we are prone to forget how great a service this was to mankind and to the progress of medical science. Dr. McCollom has won international recognition for this and for his similar work in the supression of scarlatina, as evidence of which he was chosen in 1908, from among the entire medical profession, to write the chapters on

diphtheria and scarlet fever in Osler's "Modern Medicine." As city physician and as superintendent of the South Department, Dr. McCollom put into effect in practice the modern methods in control of contagious infections, so that since the opening of the South Department in 1895 there has been no general epidemic of scarlet fever in Boston comparable with those in previous years. The statistics of these diseases are modestly but eloquently presented in a series of graphic charts published by Dr. McCollom in 1914.

Upon the retirement of Dr. Rowe in 1909, Dr. McCollom became superintendent of the Boston City Hospital and for the past six years has displayed in that office the same zealous efficiency of public service that he showed as city physician and at the South Department. This period has been marked by important progress in the development of the hospital in which Dr. McCollom has had a prominent and guiding part. No detail of administration was so minute as to escape his watchful oversight. His standard of fidelity in the littlest things of public service was of the highest. To the discerning eye evidence of this is patent in every aspect of his work,—in the painstaking care, for instance, of his annual reports and hospital statistics. In his last report (the fiftieth of the hospital) is a diagrammatic table illustrating the percentage distribution of funds in the administration of the hospital, a diagram requiring much pains and labor for its preparation, and presenting results of important value to professional hospital administrators. Dr. McCollom was not only a public hygienist in advance of his time but established a standard of honorable fidelity in the administration of public funds which might worthily serve as an exemplar to others in public service.

Dr. McCollom has been fortunate in that his work has been genuinely appreciated by those of his own time and generation. In accepting his resignation as superintendent, the trustees wrote in part as follows:—

"The trustees are exceedingly sorry that your health has compelled you to take this step. They are reluctant to part with an associate with whom they have enjoyed such long and pleasant relations, and one whose unflagging zeal and earnest and untiring efforts for its welfare have contributed very much to the upbuilding and high standing of the hospital. But above all else stands the record of the great work you have done for the South Department, which will be a monument to you more enduring than bronze or stone. Your unfaltering faith and courage in the use of antitoxin, which has so marvellously decreased the death rate from diphtheria, has saved to the world many thousands of useful lives and a grateful public will ever hold your name in high appreciation and gratitude for your noble services and research. After forty-two years of faithful service for the city of Boston, you have the consciousness of having achieved and merited a position that places you in the front ranks of the benefactors of mankind. In your retirement you carry with you the well wishes and high commendation of the trustees and the public. The trustees extend to you their sincere sympathy and the hope that a well-earned rest may restore such measure of health as to enable you to pass many years in comfort and enjoyment."

Dr. McCollom's contributions to medical science have also been abundantly recognized by his colleagues, and as emeritus professor of contagious diseases in the Harvard Medical School, he holds a position at the head of his special department of medicine.

It is a matter of the greatest good fortune for the community and the profession that Dr. McCollom's withdrawal from the hospital will leave him free to continue in private the study and practice of his specialty. The most cordial esteem and regard of the profession follow him with wishes for continued health and activity.

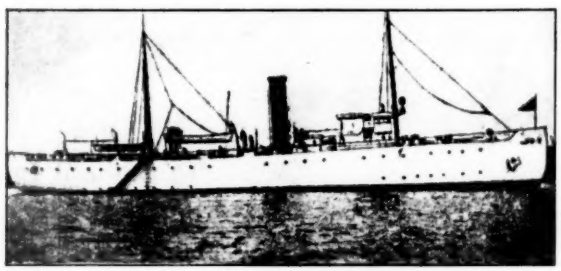
His has been a long and honorable career of professional and public service whose ripest and most honored years are yet to come.

A HOSPITAL SHIP FOR DEEP SEA FISHERIES.

In the issue of the JOURNAL for November 23, 1911, we published an editorial on "The Romance of Medical Relief at Sea," describing the plan, initiated by Drs. L. L. Williams and T. W. Salmon to provide a hospital cruiser to patrol the deep sea fisheries of our shore and carry first aid to the sailors who are endangering their lives in the common service. In 1912 a bill aiming to embody this project in legislation was introduced before the National Congress by Representative Gardner, asking an appropriation of $50,000 for the purchase of such a craft and for a suitable annual appropriation for its maintenance. This bill was discussed in

Congress for over a year, was approved and advocated by numerous local and national bodies and was warmly championed by individuals, among them Dr. Horatio R. Storer and other physicians. Notwithstanding this, probably for political reasons, the bill, after being approved in committee and reported to Congress, was finally defeated in 1913. The project, however, was not at an end.

In the summer of 1914, Mr. Gardner obtained an amendment to the pending revenue cutter bill permitting the Secretary of the Treasury to fit out a United States revenue cutter to serve as a hospital ship in the deep sea fisheries off the New England and Newfoundland coasts. The *Androscoggin* was selected and equipped



THE ANDROSCOGGIN.

for this purpose and on December 22 was assigned to the Boston and Gloucester fishing fleet from January 1 to February 20. Capt. W. E. W. Hall is in command of the vessel and Dr. O. H. Cox of the United States Public Health Service has been detailed to take charge of the medical department. The equipment of the ship for medical and surgical purposes has been thorough.

"Three large rooms have been set aside for the hospital quarters. One is a sick bay with six sanitary cots, another is the isolation ward, with two cots, where contagious cases found among the fishermen will be cared for, and the third or centre room, consists of an up-to-date operating room, patterned after the hospitals on battleships. There is an operating table, water sterilizing tanks and basins, surgical instruments and in fact all the paraphernalia found in a hospital."

The route of the *Androscoggin* on its cruise comprises the fishing territory off the entire coast of northern New England and the Provinces, including Brown's bank off Nova Scotia and the Banquereau and Sable Island banks to the eastward. The vessel sailed from Boston early in January and on January 7 left Gloucester for her initial cruise. In the early days of her service she seems amply to have justified the expectations of those who have consistently urged the necessity of such a service. Within a week the vessel was able to transfer from a fishing schooner to hospital at Halifax a patient with appendicitis in urgent need of operation, and numerous minor cases were treated aboard the *Androscoggin* or by boarding parties on their own ships. Later, when the Belgian relief ship *Camino* was disabled, the *Androscoggin* aided the British steamer *Kanawha* in convoying her safely to port. It is a matter of great satisfaction to physicians and to all interested in problems of medical relief, that it has at last been possible to establish a service so urgently needed. The success of this first six-weeks' cruise of the *Androscoggin* should lead to the extension of the plan for such service in the future, a service in which the United States has hitherto been discreditably inferior to Great Britain, France and other civilized nations.

THE NURSING QUESTION.

A BILL is now before the Massachusetts Legislature to amend the requirements for nursing to the following effect:

"Applicants must show the usual qualifications as to age, character, etc., and must have received a certificate of graduation from a training school for nurses, considered efficient by the board, etc., etc. Applicants for limited registration under this act, who shall furnish proofs as to age, character, etc.....but who cannot qualify as graduates of approved training schools for nurses....shall be examined by said board, and if found competent to care for cases which do not require expert services, shall be registered with right to use the title of household nurse, and shall receive a certificate in testimony thereof, etc. Nurses registered with the title household nurse, shall not care for the major surgical cases, nor make internal obstetric examinations....."

"After January first, in the year nineteen hundred and sixteen no person shall engage in the work of nursing for hire in this commonwealth unless he or she has become registered in accordance with the provisions of this act."

"The board shall have authority under this section to investigate at any time the training schools for nurses in this commonwealth for the purpose of determining their fitness and efficiency as shown by their general equipment, by the character, the methods and the extent of in-

struction given. For the purpose of conducting this investigation the board may employ a person legally entitled to the title of registered nurse."

It would appear from a paper entitled, "Some Problems in Relation to Nurses' Training Schools," read by Dr. Charles Stover before the New York State Medical Society, that only ten per cent. of the nursing outside of hospitals in the state of New York is done by graduate nurses. There are no figures to show that this proportion is different in Massachusetts. In other words, nine-tenths of the people,—probably those who cannot afford to pay the minimum price of twenty-one dollars a week are a considerable proportion—must get along without trained nursing when they are sick. Although provision is made in the bill for "household nurses," legislation is asked to prohibit nursing for hire unless registration has been obtained.

At the meeting of the New York society at which Dr. Stover read his paper a committee was appointed consisting of Dr. Stover, an ex-president of the society, Egbert LeFevre, dean of the University and Bellevue Medical College, Alexander Lambert, professor in Cornell Medical College, and Roswell Park, the eminent surgeon. The report of this able committee should cause our legislators to consider seriously whether we in Massachusetts may not adopt the same conclusions. The report was in part:

"It is a fair conclusion that the standard for entrance in New York is too high for practical results.... It is more important that the people have small hospitals than that a few highly trained nurses obtain the thus-far little coveted title of R. N..... Meanwhile your committee is of the opinion that the State should recognize the nurse problem as an experimental one, to be regulated at present by wise administration rather than by legislation."

After all is said, the health of the public under the present laws is in the hands of the physicians who have been registered by the Commonwealth and the responsibility is theirs and not that of their assistants, the nurses. If the physician finds his assistant unsatisfactory he can procure another, adapted in training, personality and pay to his patient's requirements. Perhaps in the future the nursing profession may provide trained services for all of the people for good pay, for small pay, or for no pay at all, just as now the medical profession furnishes skilled care to all the sick. When this time arrives, if it does, it may seem best for the State to limit nursing to those who are registered. Conditions at present do not justify such a course. That the Board of Registration of Nurses should have supervision over the training school for nurses is a debatable point and does not correspond with the practice in the case of the Board of Registration in Medicine and the medical schools.

CONGENITAL PYLORIC TUMOR.

IN an article printed elsewhere in this issue of the JOURNAL, Dr. Charles L. Scudder presents and emphasizes an important differential classification of cases of congenital infantile pyloric stenosis. The obstruction in these cases may be either functional or organic, it may be due either to muscular spasm or to the presence of an actual tumor impinging upon the lumen of the pylorus. That true and uncomplicated pylorospasm may exist there can be no reasonable question. In babies presenting this condition, the symptoms are not pernicious, they are variable, and are characterized chiefly by intolerance of the stomach for the total amount of food which it ought normally to contain at the given age, though on lesser amounts of somewhat stronger food the nutrition can be fairly well maintained. On the other hand, babies in whom the obstruction is due to pyloric tumor are intolerant of all food, and present a fairly invariable train of fatally progressive symptoms. The most important point, therefore, in the diagnosis of cases of congenital infantile pyloric stenosis is the early and accurate differentiation of these two classes of cases. This may most effectively and reliably be accomplished by means of the bismuth meal x-ray.

It has been maintained by many that in cases of obstruction due to pyloric tumor there is present also an element of pylorospasm. This statement seems to be fairly disproved by the series of cases reported by Dr. Scudder from his personal observation, and collected by him from the literature and from the personal communications of other surgeons, in which bismuth meal x-ray or autopsy has shown the persistence of absolute pyloric obstruction by tumor following symptomatic relief of the condition by posterior gastro-enterostomy. Dr. Scudder speaks with authority on this subject by virtue of his extensive and

successful experience in the treatment of such cases. For the general practitioner, the most valuable lesson to be derived from this consideration is the crucial importance of the prompt and accurate differential diagnosis of all cases of congenital pyloric obstruction before it is too late for surgical intervention to afford prospect of life-saving relief.

MEDICAL NOTES.

EUGENIC BILL IN INDIANA.—Report from Indianapolis states that on January 21 the Indiana senate passed a bill requiring that all persons before obtaining a marriage license must present a satisfactory certificate of health from a physician. The bill awaits action by the house of representatives.

PATHOLOGIC PICTURES IN NATURAL COLORS.—On Friday and Saturday of last week, January 29 and 30, at an exhibit of x-ray materials in Atlantic City, N. J., there was shown a valuable collection of pictures of pathologic specimens in natural colors, made by means of the new kodachrome plates. This is the first public exhibit of work of this character and the possibilities suggested by this method of reproducing pathologic material are of distinct interest to physicians.

BRITISH NEW YEAR'S HONORS.—Among the recipients of British New Year's honors recently announced are, as usual, several physicians. Sir William MacGregor, G. C. M. G., C. B., is appointed to the Privy Council, Surgeon Major General Eugene Fiset of Canada, is created C. M. G., and the order of knighthood is bestowed on Perceval Aleyn Nairne, Chairman of the Committee of the London School of Tropical Medicine.

NEW YORK DEATH RATE DECLINES.—The mortality during the past week was noteworthy because of the extremely low point which it reached as compared with that of the corresponding week in 1914,—13.10 last week as against 14.6 in 1914. Inasmuch as the mortality of the previous weeks of last year was relatively high, this drop for the city is very welcome. Taking into consideration the increase of the population, the weekly rate during the week just ended shows a decrease equivalent to 171 deaths. The deaths from influenza numbered approximately the same as during the same week in 1914; on the other hand the deaths from organic heart diseases, diseases of the digestive system, pulmonary tuberculosis, Bright's disease and nephritis, and diseases of the nervous system were considerably fewer.

The number of deaths from pneumonia, while much higher than in the corresponding week in 1914 was considerably below that of the week ending January 16th, 1915. The mortality from the infectious diseases, especially measles and diphtheria was very much below the average.

Viewed from the point of age, the decreased mortality was apparent in all the age groupings of the population.

The death rate for the first four weeks of this year was 14.32 per 1000 as against 14.62 per 1000 for the corresponding period in 1914, a decrease of .31 of a point.

EUROPEAN WAR NOTES.—Report from Budapest states that on January 2 Dr. William Crookston, the new director, and Dr. Henry Day, the new assistant director, of the American Red Cross Hospital at Budapest, arrived in that city from New York by way of Genoa. Dr. Charles MacDonald of Salem, N. J., the former director, and Dr. Cary A. Snoddy of Knoxville, Tenn., the new director of the American Red Cross Hospital at Vienna, also arrived at Budapest on the same day.

It is announced that Mr. William Lindsey of Boston, has promised to give, if necessary, $10,000 to pay the expenses of the Harvard Medical School unit which it is planned to send to the American Ambulance Hospital at Paris on April 1. This unit will have charge of wards aggregating one hundred and fifty beds.

An official report of the American Red Cross Society published on January 22, records the activities of that organization from August 1, 1914, to January 1, 1915. During this period a total fund of $1,188,112. was collected by the Red Cross. Up to January 9, $760,510. of this fund has been expended in the maintenance of forty-five surgeons and one hundred and fifty nurses on war duty in Europe.

"By March the six months' duty, which each member of the various units agreed to give the Red Cross, will have expired, and those who desire to return to this country will be allowed to do so, other surgeons and nurses being sent to Europe to take their places.

"The report shows that up to January 9 the Red Cross had shipped to Europe 772,900 pounds of medical cotton, 802,400 yards of gauze, 709,000 assorted bandages, 3168 rolls of adhesive plaster, 13,965 pounds of chloroform and ether, 77 cases of drugs and medicines, 35 cases of instruments, 20 United States army field medical outfits, 15,000 doses typhoid prophylactic, 10,000 tubes smallpox vaccine, 50,000 doses tetanus antitoxin, 9,500 blankets, 2,211 shawls, 516 coats, 1,740 sweaters for women and children, 10 barrels of alcohol, and 2,638 cases of miscellaneous supplies."

The French Red Cross, consisting in reality of three affiliated societies, has been taking an active part, in conjunction with the French War Office, in the care of wounded soldiers in the north of France. "At the beginning of the war this society established 93 dressing stations, 83 dispensaries and 35 canteens at railway stations. The principal work since undertaken by the society has been the preparation of auxiliary hospitals; it has organized altogether 771, which contain now 56,579 beds. To bring the wounded to these hospitals, however, it possesses only 32 automobiles, which are stationed for the most part at Paris, Amiens, Creil, and Rheims."

On Jan. 30 the total of the New England Belgian relief fund amounted to $186,276.41; the Massachusetts Red Cross fund to $106,997.28; the New England Jewish relief fund to $29,727.92; and New England British relief fund to $17,506.82; the New England Polish relief fund to $14,961.67; and the Russian relief fund to $10,674.00.

In New York the following committee has been appointed to organize and raise a Serbian relief fund: Willard Straight of J. P. Morgan and Company, Mrs. Edward Hewitt, Prof. M. I. Pupin of Columbia University, Dr. Albert Shaw, Mrs. Lawrence Elliman, Mme. Grouitch, Mrs. Ethelbert Nevins, Mrs. John L. Griffith and Miss F. Hastings, secretary.

BOSTON AND NEW ENGLAND.

HOSPITAL CONCERTS FOR FEBRUARY.—The concerts of the Boston Hospital Music Fund for February have been announced as follows:—

Feb. 7 Perkins Institution for the Blind, Watertown.
Feb. 14 and 21 Boston City Hospital.
Feb. 23 Cullis Consumptives' Home.
Feb. 28 Cambridge Homes for the Aged.

MASSACHUSETTS HOMEOPATHIC HOSPITAL.—The annual meeting of the corporation of the Massachusetts Homeopathic Hospital was held in Boston on January 26. The present officers were reëlected. Owing to the unusually large number of free patients last year, a deficit of $20,000 was announced in the financial report. Edward H. Mason, the president, reported that during 1914, 6,489 patients were treated in the main hospital, and in all departments 23,260, an increase of 808 over 1913.

At the Haynes Memorial department for contagious diseases, 757 patients were treated, 300 more than in any other year since the opening of the department in 1908.

BROOKLINE FREE HOSPITAL FOR WOMEN.—The recently published thirty-ninth annual report of the Brookline (Mass.) Free Hospital for Women records the work and progress of that institution for the year ended October 1, 1914. During this period the total number of patients operated on was 705, an increase of 23 over the previous year. In the out-patient department there were 6,190 consultations and 1,350 new patients of whom 742 were referred to the main hospital. A class of twelve nurses was graduated from the Training School. The report is illustrated with several full page plates representing Potter ward, the hospital building and a portrait of the late Dr. William H. Baker, founder of the Hospital, of whom an admirable obituary is presented in the report by Dr. William P. Graves.

PORTLAND BOARD OF HEALTH.—The recently published twenty-seventh annual report of the Portland (Me.) Board of Health records the activities of that body for the year ended April 1, 1914. During this period the city suffered from a small epidemic of forty-seven cases of smallpox which was efficiently controlled and terminated with no deaths. The total number of deaths during the year was 1,059, of which 121 were from pneumonia, 109 from nephritis and 86 from tuberculosis. The total number of births was only 1,262.

DIPHTHERIA IN HOLYOKE.—The latest public health bulletin issued from the office of the Massachusetts Commissioner of Health, presents the following statement relative to a small epidemic of diphtheria which occurred in Holyoke, Mass., during the late summer and fall of last year:—

"Twenty-nine cases of diphtheria were reported by the Holyoke Board of Health, the first on August 20 and the last on November 4. Since November 4 no cases have been reported from the Springfield district. The 29 cases occurred in 20 homes. In 15 families there was one case each; in two families, two cases each; in two families, three cases each; and in one family, four cases. The 10 houses were apartment houses. The ages of the patients varied from two to fourteen. The epidemic occurred soon after the opening of the Springdale School on September 8.

"There were three deaths, one in October and two in November.

"The probable cause of the epidemic was some mild unrecognized diphtheria bacillus carrier. It could not be ascertained whether the infection actually started within or without the school; that it spread among the school children, however, is a known fact, and undoubtedly by direct contact."

EPIZOÖTIC OF FOOT AND MOUTH DISEASE.—On January 22, the federal quarantine for foot and mouth disease in Massachusetts was raised from the counties of Barnstable, Berkshire, Dukes, Franklin and Nantucket. The only territory in the State where the disease now exists is at Dracut and in the vicinity of Rehoboth and Swansea. Portions of the counties of Bristol, Essex, Hampden, Hampshire, Middlesex,

Norfolk, Plymouth, Suffolk and Worcester are still, however, considered exposed areas.

In Connecticut the quarantine was, on the same day, raised from the counties of Fairfield, Litchfield, Middlesex, New London, Tolland and Windham, but portions of the counties of New Haven and Hartford are still considered as exposed area.

In Rhode Island the quarantine was raised from the counties of Bristol and Washington, but portions of the counties of Kent, Newport and Providence remain as exposed territory. Report from Providence on January 22 stated that on that day two more infected herds were discovered, one at Pawtucket and one at Pocasset.

Meningitis and Poliomyelitis in Massachusetts and New York.—The weekly report of the United States Public Health Service for January 22, states that during December, 1914, there were in Massachusetts twelve cases of cerebrospinal meningitis and six of poliomyelitis, and in New York, twenty-seven cases of meningitis and sixteen of poliomyelitis.

The Sanitation of Chinatown.—The Boston Board of Health has recently made an active investigation of sanitary conditions in the Chinese quarter of this city and has ordered extensive changes and improvements in that district. The alterations required are indicated by the following regulations which have been issued by the Board:—

"Every building must be equipped with two ways of entering and leaving, one in front and one in back. All sewer pipe openings must be permanently closed. By means of such openings in cellars, it is claimed, gamblers have been able during police raids to throw gambling implements wholesale into the sewers. All swinging gas fixtures must be replaced with stationary fixtures. The fire sprinkler system must be installed in every building occupied by eight or more families. Every basement must be ventilated to the satisfaction of the Health Board. Every basement must have proper exits and entrances. All stairways must be thoroughly repaired. All fire balconies must be repaired, and buildings lacking them must immediately install them."

Milk and Baby Hygiene Association.—The Boston Milk and Baby Hygiene Association has recently issued a small book to mark the close of the sixth year of its activities.

"From 1906 to 1910 there was an average death rate of 133 out of every 1000 babies born. Since the organization of this association the rate has steadily decreased until it was reported in 1914 the infant mortality was reduced to 100 out of 1000. It is hoped that in the coming year this rate may be even more decreased through the work of this society.

"During the past year the association provided medical supervision and nursing service for 4,097 babies, which is over one-fourth of the babies that are born here every year. It also cared for 20 per cent. of the babies that were under one year old.

"Free advice was given at 655 medical clinics, at which the attendance numbered 19,673. This is an increase of 43 per cent. over last year's work.

"Under the auspices of this society 12 milk stations have been maintained in the poorer districts of the city, where mothers could obtain tested milk at cost. The mothers in many homes were instructed by 14 specially trained nurses employed by the society. These nurses made 50,221 visits to homes and demonstrated to the mothers and children in the neighborhood of the milk stations through the 'Little Nurses' Club, the care of babies.

"Besides this work, the society has conducted an active campaign for spreading knowledge of the prevention of sickness and the proper care of babies.

"The cost of maintaining this work is about $25,000 a year. The Association has no endowment and the work has had to be done by means of public subscription. It is interesting to note that $10 provides medical and nursing supervision for one baby for nine months and $20 will care for two babies for one year. Fifty dollars pays for the expenses of a milk station for one week which has the registration of 2,000 babies. One thousand dollars provides a nurse and incidental expenses of one milk station for one year, and $300 provides service for one station through the hot weather.

"The headquarters of the Association are at 26 Bennet street. The officers for the coming year are: Chairman, Edward R. Warren; secretary, Michael M. Davis, Jr.; treasurer, Charles E. Mason; director, George R. Bedinger; medical directors, Drs. Arthur A. Howard and Harold A. Gale."

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending Jan. 26, 1915: Diphtheria, 79, of which 6 were non-residents; scarlatina, 89, of which 15 were non-residents; typhoid fever, 8; measles, 60; tuberculosis, 54, of which 1 was non-resident. The death-rate of the reported deaths for the week was 15.25.

Current Literature

Surgery, Gynecology and Obstetrics.

January, 1915.

1. *Porter, M. F. *Boiling Water Injections into the Thyroid Gland for Hyperthyroidism.*
2. *Clopton, M. B. *The Diagnosis and Treatment of Osteomyelitis.*

3. *RODMAN, W. L. *Pylorectomy and Partial Gastrectomy or Excision of the Ulcer-Bearing Area in the Treatment of Gastric Ulcer.*
4. TUPPER, T. *Transplantation of Ovaries.*
5. *BUFORD, C. G. *Goitre in Children.*
6. WATERS, C. A., AND COLSTON, J. A. C. *A Report of Three Cases of Fibrosclerosis of the Penis Treated by Roentgenization Without Improvement.*
7. NOBLE, G. H. *Intra-abdominal Dynamics and Mechanical Principles Involved in the Cause of Backward and Downward Displacements of the Uterus.*
8. DOOLIN, W. *Experiments on the Transplantation of Gastric Mucous Membrane.*
9. *RUNYAN, R. W. *Dislocation of the Semilunar Bone.*
10. *CAMPBELL, A. MACK. *Benign Tumors of the Stomach.*
11. HANDLEY, W. S. *Cancer of the Breast.*
12. MORSE, A. H. *Bilateral Congenital Caput Obstipum.*
13. BONN, H. K. *A Series of Liliform Appendices.*

1. Porter's conclusions from experimental and clinical data are that injections of boiling water into the thyroid gland should be substituted for the so-called medical treatment in patients with small thyroids and moderate symptoms of hyperthyroidism. This method is also peculiarly well adapted to the treatment of patients with moderate or severe symptoms and relatively small glands, and especially to cases wherein the hyperplasia is circumscribed. It is, therefore, well adapted to the treatment of patients who have had a lobectomy done and are still suffering from symptoms of hyperthyroidism with hypertrophy of the remaining lobe. Patients with large goiters and extreme symptoms of hyperthyroidism should be treated with the injections until they become safe surgical risks and then have the gland removed. Boiling water injections are not recommended in non-toxic goiter.

2. Clopton's article is beautifully illustrated and of distinct interest. It is a careful study.

3. Rodman, drawing from his own experience and that of other operators, is of the decided opinion that if the ulcer or ulcers are situated at or near the pylorus, as they are in about 80% of all cases, and the pyloric end of the stomach and proximal portion of the duodenum can be easily mobilized, pylorectomy, which gets rid of the existing ulcers, and prevents future ones to a large extent, removing as it does, four-fifths of the ulcer-bearing area, is certainly the operation of choice. The frequency with which hemorrhages, perforation and cancer, especially the latter, follow gastroenterostomy, show it to be wholly inadequate. Moreover, the radical operations of excision and pylorectomy are only slightly more dangerous, while far more beneficial in every way than gastroenterostomy.

5. Buford in an interesting article shows that in certain districts like Chicago, where sewage polluted water is used for drinking purposes, there is a frequent occurrence of goiter among children. This condition may also result from focal infections such as occur in tonsils, adrenals, and necrotic teeth.

9. Runyan states that many x-rays are often necessary to make a diagnosis of dislocated carpal semilunar. Closed reduction can be accomplished in about half the cases and should be tried irrespective of the length of time since the dislocation occurred. Open reduction is preferable to excision.

10. Campbell reviews the signs and symptoms of the different kinds of benign tumors of the stomach and describes a very interesting case of his own of papilloma of the stomach relieved by operation.

[E. H. R.]

THE LANCET.

DECEMBER 19, 1914.

1. *GOODALL, E. *The Croonian Lectures on Modern Aspects of Certain Problems in the Pathology of Mental Disorders. Lecture III.*
2. BUCKLEY, J. P. *A Method of Treating the Sac in the Radical Cure of Femoral Hernia.*
3. GEMMILL, W. *A Treatment for Prolapsus Ani in Young Children.*
4. FAIRLIE, H. P. *A Case of Delayed Chloroform Poisoning.*
5. MARK, L. *A Case of Acromegaly Two Hundred Years Ago. (Illustrated.)*
6. JUDSON, A. B. *Trigger Finger, Its Cause and Mechanism.*
7. BOWLBY, A. A. *The Treatment of Wounds in War.*
8. NEWLAND-PEDLEY, F. *Our Army's Teeth.*

1. In the third Croonian Lecture, Goodall discusses variations of the leucocytal count in dementia paralytica. He then discusses the relation of ferments and antiferments, their increase and decrease in mental cases. He considers the influence of intercurrent diseases, and the effects of tuberculin, leucocyte extract, etc. [J. B. H.]

BRITISH MEDICAL JOURNAL.

DECEMBER 12, 1914.

1. ELIOTT, T. R. *Transient Paraplegia from Shell Explosives.*
2. CHEATLE, G. L. *Antiseptics in War.*
3. SHIPLEY, A. E. *Cockroaches. (Illustrated.)*
4. *OVEREND, W. *The Incipient Pulmonary Phthisis of School Children.*
5. SHAW, H. B. *The "Elderton" Method of Control in Testing the Value of New Tuberculin.*
6. WOODCOCK, H. DEC. *Artificial Pneumothorax.*
7. HARMER, W. D., ET AL. *Discussion on the Treatment of Inoperable Growths of the Throat and Nose.*
8. FRASER, J. S., ET AL. *Discussion on Oto-sclerosis.*
9. MUECKE, F. F. *Auditory Re-education.*
10. HILL, W., AND ELPHICK, G. J. F. *The Hemostatic Tonsil Guillotin. (Illustrated.)*
11. WATSON-WILLIAM, P. *The Intranasal Operative Treatment of Frontal Sinus Suppuration.*
12. KELLEY, A. B. *The Difficulties and Dangers of Exploratory Puncture of the Antrum of Highmore.*
13. GOGARTY, O. ST. J. *Latent Empyemata of the Nasal Accessory Sinuses.*

4. Overend presents a long and elaborate paper on incipient tuberculosis in school children from the point of view of the roentgenologist. He limits his discussion to children between the ages of 5 and 15, when the tuberculous process tends to become localized within the ducts and glands of the lymphatic system of the respiratory organs. This is practically the time of school life. He describes the radiological appearance of a healthy child's chest, and then takes up the anatomical and pathological considerations. He divides the bronchial glands into four classes: (*a*) tracheobronchial, (*b*) bifurcation, (*c*) hilum, and (*d*) pulmonary glands. The exact location of these glands and their pathological consideration, he describes.

He then discusses the channels of infection and dissemination: and among various possibilities, includes: 1. Caseation of glands. 2. Caseous pneumonia. 3. Eruption into a bronchus. 4. Eruption into a blood vessel. 5. Lymphatic dissemination.

The clinical symptoms and signs are at first obscure and indefinite, and due to a slow and chronic absorption of the products of bacillary metabolism and to the compression exercised upon adjoining structures by enlargement of the glands. He discusses these

signs and symptoms in detail. He devotes a very short space to the physical signs.

He then takes up the radiological examination of the patient. The radiologist, in his opinion, should endeavor to decide as to: 1, Presence or absence of disease. 2, Its activity or latency. 3. Whether it is open or closed. 4, The course of dissemination. (In the reviewer's opinion, the radiologist has a large task before him if he can correctly answer these last three questions.—J. B. H.) He presents a few illustrative cases.

The presence of the following five conditions he believes enough to strongly suspect enlarged bronchial glands, probably of tuberculous origin: 1, Intermittent sudden cough in the absence of cases of pertussis. 2. Wasting, pallor, and tiredness. 3. A sub-febrile temperature, rising occasionally to 100°. 4, The presence of capillary veins and a growth of hair over the upper thoracic spines. 5, The absence of any obvious disease. [J. B. H.]

DECEMBER 19, 1914.

1. *BOWLBY, A. *The Work of the "Clearing Hospitals" During the Past Six Weeks.*
2. ROGERS, L. *Permanganates in Sloughing and Tetanus-Infected Wounds.*
3. WILDEY, A. G. *Iodine as an Antiseptic in Joint Injuries.*
4. CATHCART, C. W. *A Simple Form of Portable Dressing Sterilizer.*
5. *BASSETT-SMITH, P. W., ET AL. *Discussion on Kala-azar or Parasitic Splenomegaly and Allied Infections.*
6. PHILLIPS, L. *Is Emetin Sufficient to Bring About a Radical Cure in Amoebiasis?*

1. Bowlby gives an interesting account of his work during the past three months with the British army in France. He describes in detail the functions of so-called "clearing hospitals." Such hospitals are essentially mobile units connected with the army. He describes the class of cases received and the general methods of treating the wounded.

5. Bassett-Smith presents an interesting description of kala-azar or parasitic splenomegaly and allied infections. His article is a general summary of these conditions, the methods of diagnosis employed, etc., although presenting nothing especially new. [J. B. H.]

THE PRACTITIONER.

DECEMBER, 1914.

1. GOODHART, J. F. *The Injection Treatment for Hemorrhoids.*
2. GALLOWAY, J. *Ointments — Their Therapeutic Value and Their Abuse.*
3. FREYER, P. J. *The Symptoms and Diagnosis of Stone in the Urinary Tract.*
4. MCDONAGH, J. E. R. *Venereal Diseases as We See Them Today.*
5. *WYNTER, W. E. *The Diagnosis of Obscure Cases of Carcinoma.*
6. *HANDLEY, W. S. *A Legally Established Case of Traumatic Carcinoma of the Breast.*
7. *RIVIÈRE, C. *The Pneumothorax Treatment of Phthisis.*
8. BIGG, G. S. *War Diseases—Typhus Fever, Enteric Fever, Dysentery and Cholera.*
9. PIM, A. A. *Carbolic Acid in the Treatment of Tetanus.*
10. BARBER, H. W. *Urticaria Papulosa.*
11. *RICHARDS, D. T. *Some Lung Affections in Influenza.*
12. DRINKWATER, H. *The Longevity of Eminent Medical Men.*

5. Wynter discusses in a very general way some obscure cases of carcinoma in which the symptoms were very obscure, chronic, and generalized. He discusses the importance of these general symptoms in the diagnosis of this condition.

6. Handley discusses the question of carcinoma of the breast following trauma, and presents evidence for and against any relationship between the trauma and a subsequently developed cancer.

7. Rivière in a very general way discusses the pneumothorax treatment of phthisis, and presents various illustrative cases. On the whole, and in suitable instances, he is very favorably inclined toward this method of treatment. Suitable cases, in his opinion, are those who have had a thorough course of sanatorium treatment, and who seem, in spite of this, to be going down hill.

11. Richards, in a most interesting article, discusses some lung affections in influenza, with particular reference to migrating apical pneumonia. In regard to this, he quotes Dr. West as stating, "Influenza stands in no special relation to phthisis. . . though it greatly reduces the resistance of a body to the pneumococcus, it does not seem to do so in any special way to the tubercle bacillus." Dr. Richards agrees with this point of view, and finds that in only rare instances has tuberculosis developed after an influenza process of this kind. He presents various interesting cases showing that pneumonia due to influenza, and other pulmonary processes due to the same cause, must be regarded as serious conditions. Although he presents no exact bacteriological evidence to show that these cases were all due to the influenza bacillus, he apparently includes in this term "influenza" a variety of infection which in this country, for lack of a better word, we are apt to call "grip." [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

No. 42. OCTOBER 15, 1914.

1. VON BEHRING, E. *A Critical Analysis of the Theories in Regard to the Cause of Anaphylactic and Apotoxic Poisoning.*
2. MATHIAS AND BLOHMKE. *The Pathology and Clinical Features of Human Anthrax.*
3. DRESEL, E. G. *The Etiology and Diagnosis of Actinomycosis.*
4. JULIUSBERGER. *Thiocol.*
5. CHRISTIAN. *The Organization of Hospital Trains.*

No. 43. OCTOBER 22, 1914.

1. *JOCHMANN. *Infectious Diseases of Wounds.* 1. *Tetanus.*
2. SCHUSTER. *Diseases of Marching Soldiers: Their Etiology, Prophylaxis, and Treatment.*
3. KUHN. *An Apparatus for the Injection of Local Anesthesia.*
4. MOMBURG. *A Substitute for Bandages During the War.*
5. BUSCHKE, A. *Venereal Diseases in War.*
6. CAHEN, F. *A New Method for Transplantation of Nerves.*
7. *EPSTEIN, H. *Foligan "Henning."*
8. BREUER, G. *A New Method of Packing and Labeling Negative Paper for Roentgen Exposure.*
9. MUCH, H. *From an Egyptian Journey.*
10. SCHWALBE, J. *A Letter from Ernst v. Bergmann from the Turko-Russian War of 1877.*
11. *SCHWALBE, J. *Salvarsan "Made in England."*

1. Jochmann reviews the history of tetanus, its mode of infection, its clinical course and its treatment. For the early laboratory diagnosis he advocates the injection of suspected material mixed with sterile pumice stone under the skin at the root of the tail of mice. The pumice acts as a foreign body and attracts the leucocytes, and usual pus organisms. In this way the oxygen is used up, anaerobic conditions are produced, and the tetanus organisms grow rapidly,

producing characteristic symptoms in two or three days.

For the cultural diagnosis of the disease, Jochmann uses for medium grape-sugar bouillon. The culture is made according to ordinary technic, and the surface is covered with sterile oil. The culture is heated to 70° C., which kills off any non-spore-bearing organisms. After this, the tetanus organisms grow at 37° in pure culture.

In the treatment of tetanus, Jochmann places great reliance upon active serum treatment. He gives 100 antitoxin units intraspinally every day or two as long as convulsions are present. At the same time he injects intramuscularly, near the wound, 100 units daily, and powders the wound with dried antitoxic serum. In this way he hopes to neutralize as much toxin as possible. Finally, on the first day of treatment, he injects 100 units intravenously.

Such active treatment has not had the brilliant results which follow the use of anti-diphtheritic serum. Nevertheless, Jochmann believes that the more energetic the anti-tetanic treatment is, and the earlier in the disease it is begun, so much more favorable are the results.

Jochmann mentions the magnesium sulphate treatment, but has had too little personal experience with it for a definite opinion as to its practical value.

For symptomatic treatment, Jochmann advises morphia and chloral in large doses and either alone or combined. The patients must be well fed. When unable to eat by mouth they must be fed by rectum or subcutaneously. For the latter purpose, Jochmann has given sterile oil in as large doses as 100 grams.

7. Foligan "Henning" is a preparation of powdered orange leaves made by the firm of Henning. Epstein has used it as a sedative in a series of cases. On the whole he feels that Foligan is valuable, yet he has met with several cases in which the drug appeared to have no action.

11. Schwalbe writes a bitter article commenting upon the fact that Burroughs, Wellcome and Company are attempting to obtain rights to sell their own new products under the names of salvarsan and neosalvarsan, thus encroaching upon the patents of Höchst. Schwalbe considers that such action is unjustifiable even in war, but believes that if the London firm undertakes the manufacture of salvarsan, the injuries produced by the new drug will produce a new "English" disease, and will leave a lasting monument in the English literature.

[R. F.]

No. 44. OCTOBER 29, 1914.

1. *CZERNY, V. *The Treatment of Tetanus.*
2. FALK, A. *Subcutaneous Injections of Magnesium for the Treatment of Tetanus.*
3. SCHMIDT, A. *Gun-shot Wounds of the Lung.*
4. LEDDERHOSE, G. *The Economical and Rapid Treatment of Wounds.*
5. *FRIEDRICH, E. P. *Aural Problems in War Surgery.*
6. KÜMMEL, W. *Ear Diseases in the Field.*
7. STEIN, A. E. *Medical Photography.*

1. Czerny mentions the conditions under which tetanus will develop. Bullets rarely produce the disease, but more favorable wounds are those caused by shrapnel when large skin areas are laid bare. Prophylaxis is most important. Czerny advises prophylactic serum in any doubtful case. The best treatment is antitoxin, given either intraspinally, endoneurally, or intravenously. The most effective drugs to alleviate symptoms are morphia, chloral and paraldehyde.

5. Friedrich discusses in a general way the injuries to the ear which he has seen during the war and describes their treatment. Injuries to the external ear with indirect injury to the drum are common. One of the frequent diseases of the external ear also is furunculosis. The middle ear may occasionally be wounded by stabbing, but more often by splinters of shot or by wounds of the skull. Acute otitis media develops among troops from time to time sporadically. The internal ear can be injured directly by bullets or stab wounds, and indirectly by detonation. The treatment is largely symptomatic, since it is difficult to treat these diseases satisfactorily at the front.

[R. F.]

No. 26. NOVEMBER 12, 1914.

1. KOCHER, T. *The Treatment of Severe Tetanus.*
2. v. BEHRING, E. *The Use of Anti-tetanic Serum.*
3. *KROMAYER. *X-ray and Light Treatment to Hasten the Healing of Gunshot Wounds.*
4. STACHOW AND WIERWIOROWSKI. *First Impressions of War Surgery.*
5. STREBEL, J. *Anosmia and Traumatic Enophthalmos.*
6. *ENGEL. *Urinary Excretion in Infants.*
7. SCHNÉE, A. *Further Comments on the Treatment of Diabetes Mellitus with Ferments.*
8. ROERDANSZ, W. *A Simple and Complete Method for Counting Blood Corpuscles.*
9. ADAM. *The German, Austrian, French, Russian, and English Conditions of Military Sanitation.*

3. Since x-ray and sunlight stimulate the growth of epithelium so definitely in chronic ulcerative processes, Kromayer has used them for the same purpose in the treatment of wounds which present large ulcerated surfaces. He advocates small dosage of x-rays and states that any x-ray burn of the skin must be avoided. In using sunlight or carbon as a substitute, enough exposure is given to produce a slight erythema. On the whole, Kromayer believes that much time can be saved in the healing of wounds by the proper use of these rays.

6. Engel has undertaken to determine the amount of urine excreted by normal infants, the frequency of urination and how large are the individual portions excreted. The method of collecting the specimens consisted in connecting to the urinals used, electrodes, which in turn were attached to a bell. Thus when the subject urinated, a nurse was called, who recorded the time and the amount of urine. The amount of urine depended on the fluid intake. If an infant drinks 800 c.c. of liquid, normally about 500 c.c. of urine are excreted. An infant urinates between 20 and 30 times in 24 hours. Engel found that during periods of quiet, much less urine was excreted than during periods of muscular activity. Thus, when the child slept there would be no urine for two or three hours, while if the child were awake it urinated every few minutes. Finally, Engel found that the average amount of urine obtained at each emptying of the bladder was between 12 and 18 c.c., although in isolated cases 70 to 90 c.c. were recovered. The amount of individual specimens depended closely on the degree of muscular activity.

[R. F.]

IL POLICLINICO.

DECEMBER, 1914.

SURGICAL SECTION.

1. *DESDERI, P., AND SERAFINI, G. *Bacteriologic Researches on Bone in the Cadaver.*
2. MOSTI, R. *Surgical Intervention in Paralysis of the Radial Nerve Following Fractures of the Humerus.*
3. BRANCATI, R. *The Ulcerative Gastro-Intestinal Effects of Experimental Resection of the Lumbar Sympathetic. (Conclusion.)*
4. BEVACQUA, A. *Spontaneous Perirenal Hematoma. (To be continued.)*

1. From Pagliani's hygienic institute at the royal university of Turin, the authors report results of cul-

tural experiments on the bones of 28 recently deceased human subjects. Of these, 15 were found completely sterile, in 2 the streptococcus was found and in 11 the staphylococcus. The subject is of importance in relation to homo-necro-transplantation of bone tissue.
[R. M. G.]

Miscellany.

REGULATIONS OF STATE DEPARTMENT OF HEALTH.

At the meeting of the Public Health Council of the State Department of Health on January 19, 1915, the following regulations were adopted, governing the appointment and promotion of district health officers, to be appointed within the provisions of Chapter 792, of the Acts of 1914.

1 Grades of District Health Officers. There shall be four grades of District Health Officers, *viz*: A, B, C, and D.

2 District Health Officers appointed only to Grade D. Candidates for the position of District Health Officer, after passing a successful examination, shall be eligible for appointment to Grade D, except in the cases specified in Section 14.

3 Form of application for appointment. Candidates for the position of District Health Officer must make application addressed to the Commissioner of Health in their own handwriting, asking permission to appear before the Board of Examiners. Candidates shall state their age, date and place of birth, present legal residence, names of colleges or institutions of learning of which they are graduates, date of graduation, and shall furnish testimonials as to their professional experience and moral character.

4 Age limit. No candidate will be eligible to appear before a Board of Examiners whose age is less than twenty-three years or more than thirty-six, except in the cases cited in Section 14.

5 Professional requirements. Candidates shall be graduates of an incorporated medical school or shall have had at least five years' experience in public health work and sanitary science.

6 Citizenship. All candidates must be citizens of the United States, and preference in appointment shall be given to residents of Massachusetts.

7 Physical examination. Candidates for appointment must pass a satisfactory physical examination before a Board of Examiners except as provided in Section 14.

8 Board of Examiners. The Board of Examiners shall consist of three or more members. These members shall be selected by the Commissioner of Health from the Public Health Council or other officials of the State Department of Health.

9 Scope of examination. All examinations of candidates for appointment as District Health Officers shall be conducted by a Board of Examiners and the examination shall include a physical examination and such oral, written and practical tests as the Board deems necessary in the subjects outlined in the succeeding sections. Experience and fitness shall also be rated by the Board of Examiners.

10 Subjects for written examination. All candidates for appointment must pass a satisfactory written examination in Communicable Diseases, Hygiene and Sanitation, Preventive Medicine, Vital Statistics, Pathology and Bacteriology.

11 Compensation. The compensation of District Health Officers shall be as follows:

Grade A.	$3500.00
Brade B.	3000.00
Grade C.	2500.00
Grade D.	2000.00

12 When promoted. After five years' service in any grade the District Health Officer is entitled to examination to determine his eligibility for promotion to the next higher grade.

13 Examinations for promotion. Examinations for promotion shall be conducted by a Board of Examiners, who shall take into account the efficiency record of the candidate as well as his professional and physical fitness. Failing first examination a District Health Officer may be given a second examination after one year. Failing two successive examinations, such a District Health Officer shall be dropped from the rolls.

14 Exemptions in favor of candidates now in the service. Candidates for appointment as District Health Officers who are now (January, 1915) State Inspectors of Health in the service of the State Department of Health shall be exempt from certain provisions of these regulations, as follows:

(a) The age limit of thirty-six years is waived.
(b) If successful in passing the entrance examination they shall be eligible for appointment to Grade C, provided they have had five years' service as State Inspector of Health of the State Board of Health.
(c) They shall be given credit for service as State Inspector of Health of the State Board of Health in excess of five years in fixing the date of their eligibility for promotion to Grade B.
(d) If successful in passing the entrance examination with distinction they shall be eligible for appointment to Grade B and chall be eligible for promotion to Grade A after two years' service in Grade B.

15 Tenure of office. A District Health Officer may be removed from office by the Commissioner of Health because of failure to pass two successive examinations for promotion, or because of gross misconduct or inefficiency, but only after the accused officer has been furnished with a

copy of the charge made against him and given a hearing thereon by the Public Health Council.

It was voted to fix the date of the examination for Tuesday, February 16, and Wednesday, February 17, 1915, at 9.00 a. m., at the office of the State Department of Health, and it was further voted to require all applications for examination to be received in the office of the State Department of Health on or before February 10, 1915.

A. J. McLAUGHLIN, M.D.
Commissioner of Health.

THE AMBULANCE CONSTRUCTION COMMISSION.

THE present European war is the first in which field motor-ambulances have been extensively used. It was inevitable that many defects should be found in existing types, and in various quarters experts began to ask whether something could not be done to standardize the patterns and to improve the type. At the instance of Mr. Henry S. Wellcome, the founder of the Wellcome Bureau of Scientific Research, a Commission has been formed, and the names of members show at once that the matter is regarded as of first importance by those most intimately connected with the welfare of the wounded soldier.

Sir Frederick Treves, whose long experience and distinguished service specially fit him for the task, has consented to be the Chairman. The Admiralty is represented by the Director General of the Medical Department, R. N., while the Quarter Master General to the Forces and the Acting Director General, Army Medical Service, represent the War Office. The British Red Cross Society is, of course, represented by Sir Frederick Treves, and the St. John Ambulance Association by Sir Claude Macdonald and Sir John Furley. The remaining members are all experts. This Commission will first and foremost act as a judging committee for the award of prizes of the value of £2000 provided by the Wellcome Bureau of Scientific Research. These prizes are offered for the best designs of an ambulance-body which shall fit a standard pattern motor chassis for field motor ambulances. The last day for the receipt of competing designs is June 30, 1915. It is hoped that the competition will bring in a number of ingenious designs, from which the ideal field ambulance body will be evolved.

It may be asked why the competition is restricted to designs for a body and not for a complete ambulance including a chassis. The reason is that a chassis takes much longer to build than a body, and that, when war breaks out, it is impossible to get at short notice anything like a sufficient number of any one type of chassis. On the other hand, a standardized body to fit any chassis of approved dimensions can be constructed in numbers at comparatively short notice. And a perfected body is badly wanted to ensure complete comfort for the wounded.

It is hoped that the information obtained by the competition, and in other ways, will be published in some permanent form, available for future reference. Probably in addition to one design of special excellence, there will be submitted various ingenious suggestions which may be incorporated in the pattern design approved by the Commission. For these, a portion of the prize-money has been set apart. The first prize is of one thousand pounds, the second of five hundred, and the third of three hundred pounds. All details of conditions may be obtained from the Secretary, the Ambulance Construction Commission, 10 Henrietta Street, Cavendish Square, London, W. The competition is open to citizens of all nations.

INSANITY IN MASSACHUSETTS.

THE recently published annual report of the Massachusetts State Board of Insanity records the work of that body and of the hospitals under its charge during the past year. The report shows that one out of every 271 persons in this Commonwealth is insane.

"The insane being cared for in state institutions number 13,497, an increase for the year of 396. The board has under its care 17,386 persons, of whom 14,122 are insane, 2513 feeble-minded and 624 epileptic.

" 'The capacity of the institutions is now 13,971, and this includes new accommodations for patients, which have recently become available. Notwithstanding this addition, there is, at the present time, an overcrowding of 231. As the Legislature of 1914 granted no appropriations for patients, there are no new buildings in the process of construction. It will thus be seen that, provided the increase for the coming year is at least 442—the increase of the past year—there will be, at the close of 1915, an overcrowding of 633, while any appropriations granted by the Legislature of 1915 will not be available until from one and one-half to two years later, when the overcrowding will be still greater. It is, therefore, necessary that appropriations for accommodations for 525 patients and 254 nurses planned for this year be granted.'

"An increase of 274 this year in the number of feeble-minded being cared for is reported. The board says that immediate provision should be made for the feeble-minded because of the large number of this class of persons in the state.

"Three recommendations are made by the board: (1) To make the Foxboro State Hospital a receiving hospital for the insane, (2) to change the character of the Worcester State

Asylum to a receiving hospital, and to change its name to the Grafton State Hospital, and (3) to purchase land as an adjunct to the Northampton State Hospital so as to provide for the insane in western Massachusetts."

The report also recommends the following methods in treating mental deviates:—

"1. Examine all defective delinquents in all state institutions.

"2. Systematize the work so that the personal history, the mental state of every person confined and tendency to crime are recorded.

"3. Make every insane person useful during his detention.

"4. Increase the industrial work of every hospital with a view at some time to make all insane institutions in the state self-supporting.

"5. Make it possible to have more receiving hospitals. The only authorized receiving hospital at present is at Medfield. It is proposed to have Worcester and Foxboro also as receiving hospitals."

EXAMINATION OF CANDIDATES FOR ASSISTANT SURGEON.

UNITED STATES PUBLIC HEALTH SERVICE.

Boards of commissioned medical officers will be convened to meet at the Bureau of Public Health Service, 3 B Street, S.E., Washington, D. C., and at the Marine Hospitals of Boston, Mass.; New York, N. Y.; Chicago, Ill.; St. Louis, Mo.; Louisville, Ky.; New Orleans, La., and San Francisco, Cal., on Monday, March 8, 1915, at 10 A.M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service, when applications for examination at these stations are received in the Bureau.

Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service in hospitals for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work.

Assistant surgeons receive $2000, passed assistant surgeons $2400, surgeons $3000, senior surgeons $3500, and assistant surgeon generals $4000 a year. When quarters are not provided, commutation at the rate of $30, $40, and $50 a month, according to the grade, is allowed. All grades receive longevity pay, 10 per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For invitation to appear before the board of examiners, address "Surgeon-General, Public Health Service, Washington, D. C."

BELGIAN PHYSICIANS' RELIEF FUND.

Report of the Treasurer of the Committee of American Physicians for the aid of the Belgian profession, for the week ending January 23, 1915.

Diplomatic arrangements have just been completed whereby drugs and instruments for civilian physicians may be sent into Belgium. Recent advices from Dr. Herbert Spencer of London show that our Belgian colleagues are literally starving.

Three hundred additional boxes of food have been purchased at a cost of $660.00.

Contributions:

Dr. W. A. Coventry, Duluth, Minn.	$ 10.00
Dr. A. William Reggio, Boston, Mass.	25.00
Dr. Edward B. Heckel, Pittburg, Pa.	25.00
Dr. T. R. Williams, Punxsutawney, Pa.	10.00
Dr. J. Knox Simpson, Jacksonville, Fla.	10.00
Sonoma Co. Medical Society, Sebastopol, Cal.	50.00
Anonymous—E., Pittsburg, Pa.	10.00
Dr. A. B. Hirsh, Philadelphia, Pa.	5.00
Dr. Henry Eastman, Pittsburg, Pa.	10.00
Dr. H. S. Stennsland, Syracuse, N. Y.	2.00
Washington Co. Medical So., Marietta, Ohio	25.00
Dr. Lewis S. Pilcher, Brooklyn, N. Y.	25.00
Dr. M. Iverson, Stoughton, Wis.	5.00
Dr. A. H. Traver, Albany, N. Y.	5.00
Dr. Carl B. Drake, St. Paul, Minn.	5.00
Dr. Leonard Freeman, Denver, Colo.	5.00
Dr. Howard C. Taylor, New York, N. Y.	25.00
Dr. Walter F. Donaldson, Pittsburg, Pa.	5.00
Deer Lodge Co. Medical So., Anaconda, Mont.	75.00
Dr. W. S. Zimmerman, Spartansburg, S. C.	10.00
Dr. H. MacVicker Smith, Pittsburg, Pa.	5.00
Dr. Ethel D. Brown, New York, N. Y.	5.00
Dr. Brown Pusey, Chicago, Ill.	25.00
Total	$377.00
Previouly reported receipts	$1414.00
Total receipts	$1791.00
Previously reported disbursements	$990.00
Disbursements week ending Jan. 23	660.00
Total disbursements	$1650.00
Balance	$ 141.00

F. F. SIMPSON, M.D., *Treasurer.*

NOTICES.

Physicians visiting the city will be cordially welcomed at the following clinics on the days and hours specified.

BOSTON CITY HOSPITAL.—After January 1, 1915, public operations will be performed in the Surgical Amphitheatre each week, on Thursdays, Fridays and Saturdays, at 10 o'clock.

Thursday: First Surgical Service. Dr. Blake.

Friday. Third Surgical Service. Dr. Nichols, and Fourth Surgical (G-U) Service, Dr. Thorndike.

Saturday: Second Surgical Service. Dr. Lund.

Notice of these operations will be sent to anyone expressing his desire to receive it.

CARNEY HOSPITAL.—Dr. Bottomley and Dr. Mahoney will hold an operative surgical clinic every Wednesday at 9 A.M., and at the same hour on the same day Dr. W. R. MacAusland will hold an orthopedic clinic. All physicians are welcome to attend.

MASSACHUSETTS GENERAL HOSPITAL.—1. A surgical clinic Friday, at 9 in the out-patient amphitheatre. 2. Operations in the Bigelow amphitheatre Saturdays from 10 to 1. 3. Operations in the Surgical Building except Sunday, from 9 to 1. 4. Daily surgical ward visits at which visiting physicians will be welcome. 5. Clinic in medicine, Monday and Thursday at 9, by Dr. D. L. Edsall. 6. Clinic in neurology, Tuesday at 9, by Dr. E. W. Taylor. 7. Clinic in medicine and pathology Tuesdays at 12, by Drs. R. C. and H. Cabot and O. Richardson. 8. Clinic in dermatology, Thursday at 9, by Dr. C. J. White.

PETER BENT BRIGHAM HOSPITAL.—Physicians visiting the city will always be cordially welcomed at the Peter Bent Brigham Hospital.

The medical visit takes place regularly every morning beginning at 10 o'clock.

Operations are usually going on throughout the forenoon in the surgical amphitheatre.

The surgical clinic is held in the clinical amphitheatre on Wednesdays at 12.30 P.M.

The medical clinic is held in the clinical amphitheatre on Mondays at 12.30 P.M.

The clinico-pathological demonstration is held in the clinical amphitheatre on Fridays at 3.30 P.M.

SOCIETY NOTICE.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY.— Owing to a change in the program of our meetings, the next meeting of the Middlesex South District will be held at the Massachusetts General Hospital, Out-Patient Amphitheatre, on Wednesday, Feb. 10, 1915, at 12 o'clock noon. Dr. Richard C. Cabot of Boston will speak on "Some Puzzling Cases Before and After Death."

LYMAN S. HAPGOOD, M.D., *Secretary.*

RECENT DEATHS.

DR. JAMES M. BODINE, who died on January 25, at Louisville, Ky., was born in 1830. He was for many years dean of the medical department of the University of Louisville.

DR. HARRY CLIFTON BOUTELLE, who died on January 24 of pneumonia at Danvers, Mass., was born in Fitchburg on June 21, 1875. He received the degree of M.D. from the Harvard Medical School in 1899, settled at first in the practise of his profession at Boston where he served for several years as a school physician, and removed to Danvers in 1902. He was a member of the American Medical Association, a Fellow of The Massachusetts Medical Society and a member of the Essex District Medical Society. He is survived by his widow and by one son. At the time of his death he was a Councillor of The Massachusetts Medical Society from the Essex South District.

DR. MAX HEYDE, a docent for surgery at the University of Marburg, Germany, has died of typhoid fever contracted while serving in a medical capacity with the German army.

DR. WILLIAM H. LANGDON, who died in Wayland, Mass., on January 26, was born in Brookline, Mass., in 1871. He graduated from Tufts Dental School in 1896 and since that time has practised his profession in Boston.

DR. HERBERT JAMES PRATT, who died at Plymouth, Mass., on January 21, was born in Medford, Mass., in 1842. He received the degree of A.B. from Harvard in 1863 and that of M.D. in 1868. He practised his profession for ten years in Minneapolis, Minn., and subsequently had devoted himself extensively to travel and study abroad. He was unmarried.

DR. BENJAMIN SHARP, who died on January 21 at Beaufort, N. C., was born in Germantown, Pa., on November 1, 1858. After studying at Swarthmore College, he received the degree of M.D. from the University of Pennsylvania and subsequently studied abroad in Bavaria, Berlin, Leipzig and Naples.

In 1883 Dr. Sharp became professor of invertebrate zoölogy at the Academy of Natural Sciences, Philadelphia, and two years later became professor of zoölogy at the University of Pennsylvania. He was a life member and corresponding secretary of the Academy of Natural Sciences, for which he made several expeditions, collecting in the Caribbean Islands in the winter of 1888-9, and in the Hawaiian Islands in the summer of 1893. He also made an expedition to Alaska and Siberia on the United States revenue cutter *Bear*. He was a member of the American Philosophical Society, Boston Society of Natural History, and was vice-president of the Nantucket Historical Association. Dr. Sharp served in the Massachusetts Legislature from 1910 to 1913 as representative from Nantucket. Dr. Sharp had been, at various times, a resident of Brookline and Nantucket, Mass. In 1901 he acted as zoölogist of Commander Peary's first Arctic expedition.

DR. SIR ROBERT SIMON, professor of therapeutics at the University of Birmingham, England, has died recently at the age of 84.

DR. CLINTON WAGNER, first professor of laryngology and rhinology in the New York Post-Graduate Hospital and Medical School, has recently died in Switzerland at the age of 74.

DR. LEVI FRANCIS WARNER, who died on January 20 in New York City was born at South Glastonbury, Conn., in 1864. He received the degree of A.B. from Williams College in 1885 and that of M.D. from the Columbia University Medical School in 1889. He was for eight years a member of the New York Board of Police Surgeons, physician-in-chief to the New York Dispensary and visiting physician to St. Francis Hospital. He was a member of the New York County Medical Society and of the St. Luke's Hospital Alumni Association.

BOOKS AND PAMPHLETS RECEIVED.

Text Book of Surgical Operations, by Prof. Fedor Krause, M.D. Translated and edited by Albert Ehrenfried, M.D. Vol. I. Rebman Company. New York. 1915.

Autogenous Serum in the Treatment of Psoriasis, by Howard Fox, M.D. Reprint.

Harvard University Catalogue. 1914-1915.

International Clinic Week at the New York Polyclinic Medical School and Hospital during the International Surgical Congress, April, 1914.

The Routine Administration of Ether in Measured Dosage, by Albert H. Miller, M.D.

Physical Examination of Workers, by J. W. Schereschewsky. Reprint No. 234. Public Health Report.

The Nervous System and Its Conservation, by Percy Goldthwait Stiles. W. B. Saunders Co.

Transactions of the American Surgical Society. Vol. 32.

Infection, Immunity and Specific Therapy, by John A. Kolmer, M.D. W. B. Saunders Co. 1915.

Dissection Methods and Guides, by David Gregg Nethany. W. B. Saunders Co. 1915.

Diagnostic and Therapeutic Technic, by Albert S. Morrow. W. B. Saunders Co. 1915.

A Laboratory Manual and Text-book of Embryology, by Charles W. Prentiss. W. B. Saunders Co. 1915.